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DEPARTMENT OF AGRICULTURE

PROVINCE OF ALBERTA

ANNUAL REPORTS

1966-68

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1967 ANNUAL REPORT



DEPARTMENT OF

AGRICULTURE

PROVINCE OF

ALBERTA

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REPORT OF THE DEPUTY MINISTER

To HIS HONOUR,

J. W. GRANT MacEWAN,

Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1967.

I have the honour to be, Sir,

Your obedient servant,

HARRY E. STROM,

Minister of Agriculture.

REPORT OF THE DEPUTY MINISTER

E. E. BALLANTYNE, V.S., D.V.M., P.Ag., F.R.S.H.

The HONOURABLE HARRY E. STROM,
Minister of Agriculture.

Sir:

I have the honour to submit the annual report of the Alberta Department of Agriculture for the year ending December 31, 1967.

Department projects for Canada's Centennial year, with brief notes about each, were as follows.

"Alberta Farm Guide": A special centennial cover; a brief resume of the history of Alberta agriculture was included; approximately 10,000 copies were distributed.

"Historical Review of Alberta Agriculture": Mr. E. B. Swindlehurst was employed to write the review; 2,500 copies were distributed to all school and public libraries in the province. Agricultural Hall of Fame: The names of J. W. Hosford of South Edmonton, Benjamin S. Plumer of Bassano, Charles P. Hayes of Strome and Hugh W. Allen of Grande Prairie were added.

Centennial plaques were awarded to winners of livestock classes of national and international shows held in Alberta in 1967; nine such awards were made to exhibitors.

Master Farm Family Awards: Master Farm Family awards were made to the Don E. Purser family of Paradise Valley and the Walter V. Boras family of Picture Butte. These farm families have achieved notable success in farming, homemaking and citizenship. For the centennial year, an all-expense trip to EXPO '67 was an alternate award at the option of the winners.

Horticulture Short Course: A program initiated in the centennial year to train municipal personnel in maintenance of plantings and thus ensure survival of the trees and continuation of rural municipal horticultural projects.

Rural Beautification and Tree Planting: Some 150 municipalities, villages and hamlets throughout the province initiated parks and plantings. The department was involved directly in some and indirectly in others. It distributed in excess of 51,000 trees to the Centennial School Tree Planting Program and approximately 129,000 trees and shrubs to miscellaneous projects.

A model of Prairie Rivers Improvement and Management Evaluation (PRIME) project was developed by the Water Resources Division for display at various appropriate gatherings.

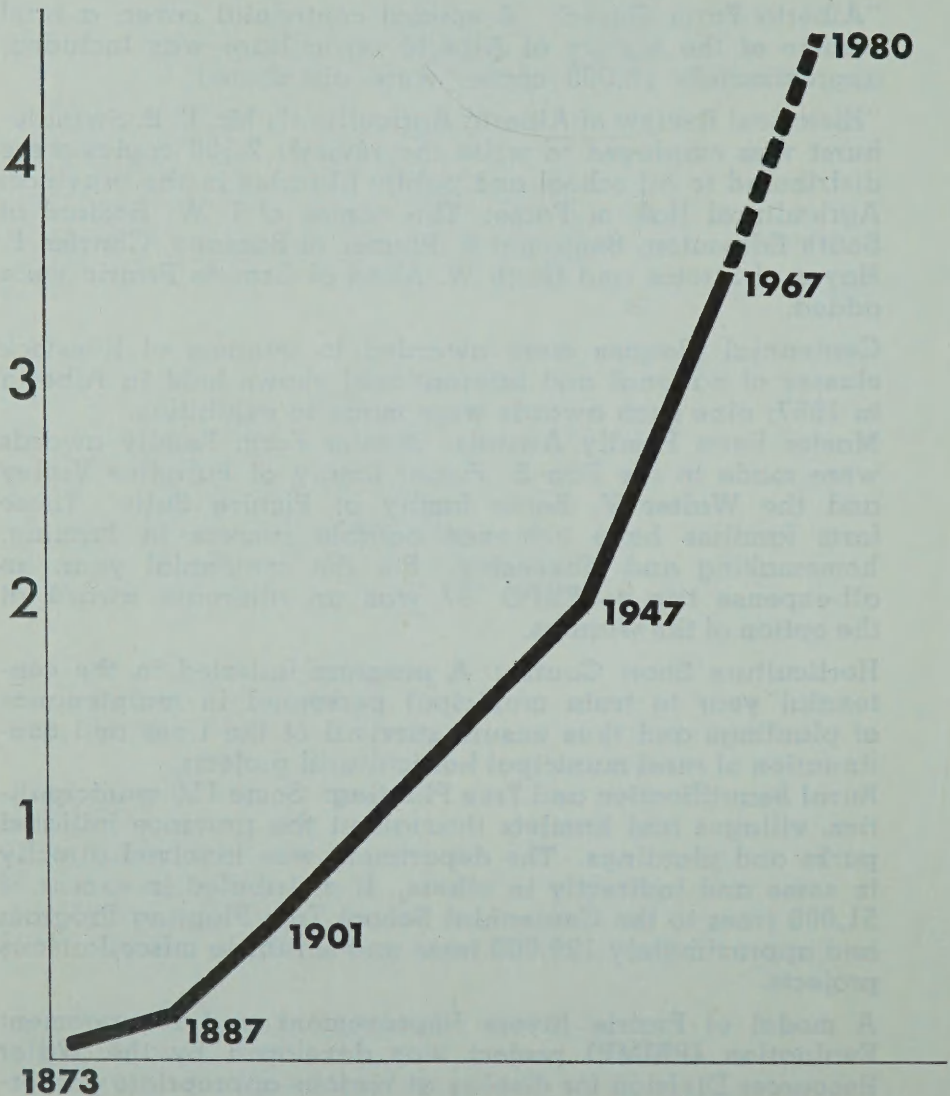
Agricultural and Vocational Colleges: The dedication and opening of two new Animal Science buildings, at Olds and Vermilion, was a centennial project; plus the presentation

of Canadian citizenship papers to the 1967 graduates the students erected centennial symbols on the college grounds at Olds and Vermilion.

Retirement Plaques: First presentations in Centennial year were to D. H. McCallum, L. Arnold, R. E. English, K. Walker and Miss I. Driscoll.

Alberta agriculture in 1867 was practically non-existent compared to it being one of the food production giants in Canada in 1967. The following graph relating to cattle only (in millions) shows the population growth from 1873, when Rev. John McDougall and his brother David brought the first ones to the Morley area.

Alberta Cattle Population (millions)



Projections based on food requirements to feed Canadians only, indicate that Alberta's cattle population by 1980 could be approximately 4,500,000 or over. This will only occur, though, if production is profitable to the producer.

The Alberta Agricultural Research Trust established by the department in 1966 has progressed favorably with funding of 56 research projects at the Faculty of Agriculture, University of Alberta, which are of practical value to agriculture in the province.

Further progress was made in providing capable and efficient service to the public through reorganization, in-service training, improved facilities and other improvements.

Specific activities of the department are detailed in the reports of the seven divisions. One can conclude that the expenditures did produce a favorable cost-benefit ratio for the economic and social progress of those engaged in the agricultural industry and the provincial economy in total.

I wish to express my appreciation to you for your guidance and counsel and to the staff members of the department for their high calibre of service in conducting the many programs of the department.

Finally, on behalf of all the members of our staff, I wish to acknowledge and express sincere appreciation to everyone who assisted the department with the work undertaken on behalf of the progress of agriculture in Alberta.

Respectfully submitted,

E. E. BALLANTYNE,

Deputy Minister.

REPORT OF THE AGRICULTURAL ECONOMICS DIVISION 1967

G. R. PURNELL, B.Sc., M.Sc., Ph.D., P.Ag. — Director

K. ELGAARD, B.A. — Assistant Director (Research)

Farm Management Branch:

A. R. Jones, B.Sc., M.Sc., P.Ag., Head
L. Bauer, B.Sc., M.Sc., P.Ag., Assistant Head
J. Gorr, B.Sc., Economic Data Analyst
B. A. Hackett, B.Sc., Agricultural Economist
M. A. Cameron, B.Sc., P.Ag., Regional Economist, Lethbridge
C. J. Roth, B.Sc., P.Ag., Regional Economist, Calgary
G. R. Keay, B.Sc., P.Ag., Regional Economist, Fairview
M. L. Fife, B.Sc., Regional Economist, Red Deer
L. G. Krause, B.Sc., Agricultural Economist

Production Research Branch:

B. J. McBain, B.Sc., P.Ag., Head
K. D. Porter, B.Comm., P.Ag., Assistant Head
G. B. Parlby, B.Sc., Resource Development Economist
R. J. Miller, B.Sc., P.Ag., Resource Development Economist
W. M. Bayda, B.Sc., P.Ag., Agricultural Economist
H. C. Anderson, B.Sc., Agricultural Economist

Statistics Branch:

T. L. Williams, B.Sc., M.Sc., Acting Head

Rural Development Branch:

V. T. Janssen, B.Sc., P.Ag., Head
K. A. Svenson, B.A., Assistant Head
P. Stelmaschuk, B.Sc., M.Ed., Rural Development Specialist
J. F. Bigam, B.A., Economist
C. A. Sauve, B.A., M.A., Sociologist

Marketing Branch:

T. S. Rackham, B.Sc., M.Sc., Head

Alberta Farm Purchase Board:

K. G. Taylor, B.Sc., P.Ag., Chairman
P. D. Stanley, B.Sc., P.Ag., Agricultural Consultant

GENERAL

The role of the Economics Division continued to emphasize three areas of concern: 1. Extension advisory assistance to farmers in collaboration with other field staff and specialists in the department; 2. Advice and counsel to Governmental officials on the economic implications of various existing or proposed policies or programs; and 3. Collection, analysis and dissemination of research data necessary to a more thorough understanding of agricultural trends, outlooks, adjustments, and social and economic development.

There is a continuing increased demand for the services provided by the Economics Division as shown by requests for many types of studies and information. Interest in division programs and projects continues to be exhibited by an increasing number of farmers, commodity groups, agri-business firms, and professional personnel and officials of various government departments and agencies.

The supply of qualified staff in Canada is still very limited relative to demand resulting in recruitment difficulties for some of the vacancies in the division.

W. R. Meeks transferred to the Extension Division during the year. R. E. English retired after more than 32 years service with the department and was awarded the Centennial Medal by the Government of Canada. The position of Assistant Director was established because of the substantial increase in the scope of the work of the division; K. Elgaard was promoted to this position with primary responsibility for the research program. G. R. Purnell spent two months in India with a Canadian Government Task Force on aid. Two vacancies and five new professional positions were filled during the year.

A brief outline of the work of the six branches of the division is presented below.

MARKETING BRANCH

Work in the Marketing Branch was resumed with the appointment of T. S. Rackham as Branch Head in May, 1967.

During the year the branch functioned mainly in a consultative and advisory role; collaboration with other branches of the division and the department was extensive. A number of extension meetings and conferences were addressed on agricultural marketing topics. Analyses of current developments of importance to Alberta were undertaken relative to agricultural production and marketing and released for publication in the press. These included, for example, implications of the findings of the Feed Freight Assistance research report, the impact of the devaluation of the British pound and the results of the Kennedy Round on trade and tariffs.

The branch is accumulating and up-dating files relevant to marketing statistics, outlook and policy. A number of daily price series are being maintained and charted. The publication of the Alberta Farm Economist was resumed with a late fall issue; its publication will be continued for the present as a quarterly release of the Economics Division. The need for this farm and ranch outlook and management guide has been demonstrated by the large number of communications received during the year with regard to the Alberta Farm Economist. A larger circulation than the current six thousand mailing list is expected to develop.

The egg marketing study carried out co-operatively with the Economics Branch, Canada Department of Agriculture, was completed with the publication of "Egg Marketing in Alberta," by

the Federal Government. A more active research program will be started in the branch with the successful recruitment of an assistant. Areas of marketing research requiring attention are in forage seeds, forage crops, vegetables, minor field crops and some aspects of livestock marketing.

STATISTICS BRANCH

The demand for statistics on the part of the public, as well as department personnel, continues to grow. With increased responsibilities the Statistics Branch hired an additional staff member, Mr. Fred Helgason, for a five-month period and borrowed staff from other branches of the division.

Federal-Provincial Conference

The Head and Assistant Head of the Branch attended the Federal-Provincial Conference on Agricultural Statistics held in Ottawa, February 21 and 22, 1967. The theme of the conference was centred around livestock statistics. The structure of the livestock industry has changed rapidly in recent years, which makes it necessary to periodically review whether present approaches are adequate to satisfy present needs and the requirements for future years. Two major areas regarding livestock statistics were discussed at the conference. 1. Present and future needs for statistics to describe the livestock industry, which will assist changes toward more efficient production, marketing and distribution. 2. Methodology for collection of such data on a continuing basis.

Considerable attention was given to cattle on feed estimates in the prairie provinces and Ontario. Mr. R. K. Smith, Director Agriculture Estimates Division, Statistical Reporting Service, U.S.D.A., attended the conference. Mr. Smith outlined present procedures being used in the United States in making livestock statistics. He informed that cattle on feed estimates were made on a quarterly basis for 33 cattle feeding states and that monthly estimates are made for the six leading cattle feeding states. Considerable pressure is being exerted to expand monthly in other states.

Crop Reports

Crop reports were issued biweekly during the growing season and crop summaries issued to the press on alternate weeks. Information on crop conditions were telegraphed to the Dominion Bureau of Statistics for inclusion in the regular crop reports. Crop correspondents rendered invaluable service to the branch by completing weekly crop report questionnaires.

Crop prospects early in the growing season were not encouraging due to poor moisture conditions in some areas and late snow in other areas. Conditions gradually improved throughout the growing season and resulted in a near average crop in most regions of the province. Moisture reserves from the unusually wet previous crop year undoubtedly helped produce the average crop. Grain grades were probably the highest on record due to extremely good harvesting conditions.

Surveys

The Statistics Branch was responsible for estimating vegetable and potato production for the fourth year. Vegetable and potato acreage and yield decreased in 1967 due to the late spring in southern regions of the province and dry weather conditions in other regions.

Investigations were carried out on methods of making forage seed estimates and it is planned to continue this work in 1968. The full co-operation of producers and the industry is essential if reliable estimates of acreage, yield and production are to be made.

The Extension Service was again enlisted to assist in the cattle-on-feed survey. District Agriculturists enumerated the number of cattle on feed on feedlots with volume of 100 head or over.

The Dominion Bureau of Statistics is now revising its methodology with respect to the cattle on feed survey and has chosen Alberta as the province in which to carry out the pilot project. New sampling procedures will be tested and January 15, 1968, was the date for mailing the first survey questionnaire to cattle feeders.

Publications

The 1964-65 edition of Statistics of Agriculture for Alberta was received from the Queen's Printer in January and distributed. The 1965-66 edition will be completed when intercensal revisions have been received; publication is anticipated early in 1968.

A large amount of material has been compiled in 1967 for the publication containing historical series of agricultural statistics in Alberta. Completion of this book is expected in 1968.

General

The Branch Head represented the Department of Agriculture at the Wheat Symposium in Saskatoon, Saskatchewan, May 10, 1967. He also represented the Department of Agriculture at the General Agreement on Tariffs and Trade meetings held in Winnipeg, Manitoba, September 14, 1967.

The Assistant Branch Head provided advisory services to branches of the division on statistical methods used in studies and research programs. Assistance was also given in studies conducted by the Fish and Wildlife Division, Department of Lands and Forests, and the Feed Testing Laboratory.

RURAL DEVELOPMENT RESEARCH BRANCH

The major role of the Rural Development Research was the continuation of the socio-economic study of Census Division 12, the initiation of a similar study in Census Division 15, the completion of the benefit-cost analysis of flood control on Lesser Slave Lake and follow-up work on the Tangent and Census Division 14 areas. Other smaller studies were undertaken along with considerable extension work.

Information supplied by the Rural Development Research Branch was used by government agencies and local people jointly, to assess the present situation and to identify the potentials for development. The branch participated in these discussions and made several recommendations pertaining to specific projects.

Census Division 14

The branch participated in the formation of the MINI Plan for Census Division 14. Details of this plan may be obtained by referring to the report of Program Development Division.

Lesser Slave Lake Study

The primary objective of the study was to determine the economic feasibility of excavating a canal at the east end of Lesser Slave Lake to maintain the water level between 1,888 feet and 1,895 feet above sea level.

The Water Resources Division advised that the cost of canal excavation would be \$3,477,900 and that annual maintenance would amount to \$110,000. The Water Resources Division also determined that flooding would begin when the lake reached a level of 1,892 feet above sea level; that the highest recorded level in history was 1,899.5 feet, in 1935, and that about 55,000 acres would be flooded or saturated at this level and thus unsuitable for cultivation. The benefits and costs of the project were estimated as follows:

Annual primary benefits	\$107,000
Annual secondary benefits	81,000
TOTAL	<u>\$188,000</u>
Annual amortised cost (100 years at 5.65%)	\$220,000
Annual maintenance	110,000
TOTAL	<u>\$330,000</u>

Alternative courses of government action were recommended and are being reviewed.

Census Division 12

Four background papers for Census Division 12 were published:

1. Population Characteristics, 2. Agriculture, 3. Industry and Resources and, 4. Recreation and Tourism. These publications provided local people with a basis for discussion of problems and the potential for development.

A major part of the work carried on by the branch was the discussion of research findings with government agencies, both in the field and at headquarters. Research findings indicated, for example, that as compared to Alberta, Census Division 12 was characterised by lower incomes, higher out-migration, higher natural increases in population and a lower percentage of persons of productive ages.

At present work is in progress on a report, Overall Economic and Social Development Plan. Much of the information in this report is being obtained through the co-operative efforts of a number of government agencies, local residents and the Rural Development Research Branch.

Census Division 15

The preparation of background papers was initiated for Census Division 15. The first publication entitled, *An Index of Low Income Areas in C.D. 15*, revealed that most of the farm operators in civic districts of C.D. 15 have lower incomes from the sale of agricultural products than the provincial average. Reports on industry and resources, population characteristics and agriculture were also prepared and will be published.

The overall strategy of development has been discussed and agreed upon between the Resource Development Co-ordinator, the University and the Rural Development Research Branch.

Other Duties

Members of the staff also participated in:

1. A sociology conference in San Francisco.
2. Meetings with rural development officials from Ottawa and Winnipeg.
3. Participated in a workshop on community development at Banff.
4. Initiated numerous interdepartmental discussions on Rural development.
5. Addressed the annual conference of community development Officials at Hinton.
6. Participated in three leadership short courses.
7. Addressed the Federal-Provincial Co-ordinating Committee on Indian Affairs.
8. Attended an Economic Statistics Conference in Quebec.
9. Assisted with an Ad-Hoc Committee on recreation.

FARM MANAGEMENT BRANCH

This branch stresses the fundamental importance of farm management in the generating of adequate returns for the family on the land. The task is to seek out those who have a potential as managers and to encourage these to develop profitable commercial farms by providing them with the managerial tools and the educational experiences using the case study approach to learning.

Farmers in general experience great difficulty in pulling together the information needed to evaluate profit generating investments. Accordingly, much of the activity of this branch is devoted to the development of information which will assist the farmer in his function as a manager of a commercial farm business.

It is also important to stress that this branch relies mainly on willing and capable District Agriculturists, District Home Economists and specialists in both the department and in agri-businesses including financial agencies to get the information across to the farm families.

Farm Record Keeping and Business Analysis Groups

The farm record and analysis program was designed to assist farmers in systematically examining their farm business. Analysis is followed by on-the-farm consultations by an Agricultural Economist and/or District Agriculturist, and in some cases, by the District Home Economist. Problem areas are pin-pointed and recommendations made that are likely to increase profits.

The program was initiated by a few aggressive farmers, District Agriculturists and Economists. Either the more formal farm business association or the informal farm business study group has served as the vehicle for attacking the farm income problem. The program now involves about 450 farmers in 36 district agriculturist areas and a significant increase is expected in 1968 because of the emphasis given to farm accounting in 1967.

Farm earnings of participating farmers are at a high level and improving. In 1966, the average net farm income of all farmers in farm business groups in Alberta amounted to \$14,070. If a wage and management allowance of \$4,800 is given to the operator a return is obtained of 7.9 per cent on farm capital.

In the past, ten separate farm business reports were issued, one for each farm business group and soil zone. This year, the ten reports were consolidated into one report. This allows farm co-operators to peruse results and developments in other as well as their own farm business group.

Computer Programming and Data Analysis

Both divisions and branches were quick to recognize the added benefits from quick and efficient processing and analysis of data. The inter-branch and inter-division use of the computer and the data analyst has already expanded far beyond original hopes and expectations. A few examples of this co-operative activity follow.

A request which has immediate and long term implications was submitted by the Plant Industry Division in respect to computerizing fertilizer recommendations from soil tests. This involved the writing and testing of a number of complex computer programs. The program has been written to provide a permanent bank of soil test data, so that additional analyses can be provided on both a township and soil area basis.

This branch has developed extensive computer programs to record, process, analyze, report and store the data required by personnel connected with Alberta's A.R.D.A. program. This year the majority of programs developed involved linear and non-linear regressions and frequency counts using the data obtained from the study of C.D. 12.

Resource development personnel requested and received a model and a computerized program for determining the demand for water by towns and cities, also, several regression programs were developed to establish the relationship between land use and value of crop production for three soil types in the Peace River area.

A regression program was developed for the Animal Industry Division in connection with their study of the effect of fertilizer on protein content, carotene content and yield of forages.

A study of the relationship of machinery investment and costs with regard to size of farm was completed and submitted to the Royal Commission on Farm Machinery.

A variety of other computer programs were developed on certain aspects of the farm business in co-operation with experimental stations and other agencies.

Livestock Enterprise Analysis Reports

Livestock enterprise analysis was completed and five reports prepared and published during 1967. These included the cow-calf enterprise, 1966; the farrow to finish hog enterprise and the hog feeding enterprise, 1965 and 1966; and the cattle feeding enterprise, 1965 and 1966.

The analysis of livestock enterprises is undertaken to show costs and returns to particular enterprises and to indicate the relationship between size of enterprise, organization and farm practices, and other aspects of management to net returns. The Animal Industry Division personnel provided the information on best husbandry practises to adopt to overcome some of the major management weaknesses identified in the analysis.

Summarized below are the average costs and returns for all farmers participating in these groups.

	Cow-Calf		Farrow to Finished Hog		Cattle feeding	
	1965	1966	1965	1966	1965	1966
Number of Farms	94	98	30	28	75	68
Gross Return	\$81.42	\$101.06	\$49.28	\$50.00	\$27.73	\$27.85
Feed Cost	53.21	53.45	21.74	24.38	16.81	18.02
Other Variable Costs	10.38	10.40	2.92	3.32	1.75	1.96
Depreciation & Interest	18.27	18.21	5.12	5.30	3.07	3.14
Net to Labor & Management	0.44	19.00	19.50	17.00	6.10	4.73

Farm Finance Conference

Many farmers have complained that credit agencies emphasize equity and pay too little attention to capacity in approving loans. In order to focus on this problem credit agencies were brought together at a Farm Finance Conference in Edmonton and Calgary. On the evidence submitted, the easing of credit seemed warranted to operators whose financial statements showed that they had managerial ability. Participants took an analytical look at several types of commercial operations in Alberta and saw the economic opportunities for increasing returns by enlarging enterprises and specializing.

The conference was very timely and in line with the expressed needs of the participants. They recommended that the same type of conference be held every other year and that the future conferences discuss client counselling on farm management subjects, exchange credit agency information and promote good fellowship and discussion.

Management Educational Services for Farmers Conference

This conference, sponsored by the department, was held in Edmonton, as a direct result of requests from key personnel in

agri-business, private consultants, farm organizations and financial agencies. Prior to the conference there was little knowledge as to what each firm or agency was doing in the farm management field. Firms were anxious to expand their educational extension programs so as to increase or maintain their share of the market. They all felt that in the area of farm management extension, both their own needs and the needs of the commercial farmers could be better met. The objective was to learn what the other firms and agencies were doing, and how they should adjust and complement each other's contribution. About 140 participated in the conference. The proceedings were typed, mimeographed and mailed to all participants. One thing that impressed everyone was the number of organizations that are doing agricultural educational extension work.

Other Publications

At the request of the Provincial Treasurer, the Farmers Union of Alberta and others, a brief was prepared on the implication of the Carter Commission tax proposals to agriculture.

A bulletin, "Dollars and Sense in Machinery Buying," was prepared to provide economic guidelines and criteria for selecting farm machinery.

The "Estate Planning for Farm Families" pamphlet was revised and mimeographed.

To answer the numerous questions on farm income tax matters a publication, "Farm Accounts and Income Tax," was prepared.

Farm Young People's Week

For the past five years the University has counted on the Farm Management Branch to teach the farm young people basic farm management. Each year the popularity of the course increases substantially.

Regional Farm Economists' Activities

The three regional economists in the province provided specialized information in agricultural economics. They instruct at farm management meetings and short courses and handle individual requests from District Agriculturists, farmers and agri-business personnel. In their regions, they handle a wide range of economic topics including financial management, credit use, farm business analysis and interpretation, advanced accounting, farm business arrangements and the economics of crop and livestock production and machinery buying.

The regional office at Vermilion is still vacant.

Statistical Summary — Farm Management Branch

Farm Management Meetings	312
Consultations (office or farm)	1,045
Letters answered	1,509
Press articles and TV or Radio appearances	33
Phone calls received	5,800

PRODUCTION ECONOMICS RESEARCH BRANCH

During 1967 the areas of study and research were extended to include the broader field of resource development as well as farm production. The Water Resources Division of the Department of Agriculture, and the Department of Lands and Forests requested investigation of the economic aspects of numerous problems confronting them for policy decisions.

Red Deer River Basin Development

Economic feasibility studies of proposed water storage and diversion projects for the development of the Red Deer Basin were undertaken at the request of the Water Resources Division. Seven possible uses were recognized and are under investigation; namely, water for stock, industrial, domestic, recreation, supplementary irrigation and wildlife propagation uses, as well as flood protection.

Information needed to evaluate benefits and costs is being obtained from secondary and primary sources. Major government contributors include the Soils, Geology and Groundwater Branch, the Hydrology Branch and the Geography Section of the Water Resources Division. Primary data has been obtained by field surveys, including: 1. stockwater needs and shortages, 168 interviews; 2. rural domestic water requirements, 44 interviews; 3. returns and costs under dryland conditions, 78 interviews. All towns, villages and hamlets within the general area of the proposed distribution system have been interviewed either personally or by letter survey. A recreational survey was carried out by the Department of Agricultural Economics, University of Alberta, on four lakes in central Alberta to determine the characteristics of the day users; 642 interviews were completed.

The economic studies will be completed about mid-1968 and the report will be part of an overall, preliminary, engineering and economic study to be presented by the Planning Development Branch of the Water Resources Division.

Bearberry Creek Study

A study of the benefits of protection from flooding in and around the town of Sundre was undertaken at the request of the Water Resources Division. The Bearberry Creek, west of Sundre, floods periodically causing damage to nine farms upstream and portions of the town. To alleviate the problem a dam upstream has been proposed and estimated to cost \$1,323,000.

A survey was conducted and the benefits of the proposed dam evaluated. The net direct benefit to project cost ratio was estimated at 0.1 to 1.0; that is, costs are approximately ten times the measured benefits.

The benefits measured include savings from losses of income and property damage and increases in agricultural production, but not the benefits accruing to businesses as a result of the reduction of the flood threat from Bearberry Creek, nor to the town in extension of facilities. The ratio is based only on the experience of the 1965 flood.

Homestead Study

At the request of the Department of Lands and Forests a study was undertaken to evaluate the progress and success of homesteaders. An extensive and detailed survey was carried out to obtain information on land development practices and costs, farm organization, management and progress in farm development, income from all sources and living facilities and standards. A report will be available in 1968.

Land Levelling Study

This study was designed to determine the economic feasibility of land levelling under actual farm conditions in relation to the alternatives of flood irrigating unlevelled land, or using sprinkler irrigation. This is the third and final year of data collecting to prepare a final report. Data presently analyzed shows a modest increase in yield per acre and substantially less labor for irrigating levelled fields as compared to unlevelled fields.

Sugar Beet Study

This three year study was initiated in 1966 at the request of the Alberta Sugar Beet Growers Association which is the official body representing over 1,200 sugar beet growers in the irrigation areas of southern Alberta. The first interim report based on 1966 production was released. The purpose is to provide both the sugar beet growers and the refiners with factual cost of production information and in addition, to show production and management practices as they affect net returns, and to assist the growers in a business-like approach to their farming practices. An interim report for the second year of the study will be made available in 1968.

Dairy Cost Studies

For the second year in a row the Branch Head had to prepare and present evidence on cost of producing milk at milk hearings for the major controlled areas which are under study. There was a further increase of 40 cents per hundred-weight granted Class 1 milk. This is not reflected in the results reported in the following table for the year ending April 30, 1967. The increase granted the previous year is reflected in an improved profit margin especially for the Calgary area where surplus milk has lowered to the extent that the blend price is approaching as high a level as is possible from the "Board Orders" for Nos. 1, 2, and 3 milk. Edmonton, however, had enough No. 4 or surplus milk beyond board order control to cause the blend price for all milk shipped to be a little over 30 cents per hundredweight lower than the average price secured by Calgary shippers after allowing for a slightly higher test for Calgary. Labor continued to be a serious problem and the data showed a further drop in amount of hired labor with the slack being taken up by family labor.

DAIRY ENTERPRISE COST ANALYSIS

EDMONTON AND CALGARY

May 1st, 1966 to April 30, 1967

	Edmonton Group Average	Calgary Group Average
Whole Milk Farms		
Number of farms	32	29
Dairy Receipts per Farm		
Value of milk sales per farm	\$18,485	\$24,520
Value of milk used in house per farm	259	214
Value of credits to dairy herd per farm ¹	3,401	3,657
Total receipts	22,145	28,391
Dairy Costs per farm		
Feed cost at farm market value (including pasture)	9,569	11,113
Labor cost ²	4,477	4,858
Overhead cost (depreciation and interest)	2,477	2,953
Other costs (marketing, milkhouse supplies, etc.)	3,275	4,554
Total costs	19,798	23,478
Net amount left for profit and management after charging custom rate per hour for dairy labor	2,347	4,913
Milk Costs per Hundredweight Basis		
Feed (including all purchased and home grown, and pasture charge)	\$ 2.42	\$ 2.27
Labor (dairy share of total farm labor)	1.13	0.99
Overhead cost (depreciation and interest)	0.62	0.60
Other costs (marketing, milkhouse supplies, etc.)	0.83	0.93
Total gross cost per hundredweight milk	5.00	4.79
Credit from herd increase (due to herd growth)	0.86	0.75
Total net costs per hundredweight milk	4.14	4.04
Average price received per hundredweight for all milk sold	4.73	5.04
Returns to management and profit per hundredweight of milk	0.59	1.00

¹ Credits to dairy herd are value of herd at the end of the year plus sales of cattle, plus cattle butchered, less value of herd at the beginning of the year and less purchase of cattle. Herd credit also covers milk fed to calves.

² Rate used is based on actual wages paid hired help. However, on farms which employ no hired help, the rates for married hired labor on the study apply to family and operator's time on dairy chores.

Flood Control

Data were collected during the year which will be used to evaluate economic benefits and costs of controlling floods and draining wet land. The areas included the Sturgeon River, Vermilion River, Ribstone Creek, Highwood River and Medicine River.

As flooding occurs sporadically, varying from year to year, and as the needs for additional water supplies for its various uses increases each year, a continuing reassessment must be made of the benefits of water resource development in relation to these changing demands.

Fresh Vegetable Feasibility Study

Draft copies of a report are being edited with publication anticipated early in 1968. A summary of recommendations was prepared for the Department.

Other Activities

Memoranda were completed for the Department of Lands and Forests on: 1. Economic Size of Farms in the Peace River District, using prevailing farm organizational practices on the

three major types of soil; 2. A review of research on Economic Analysis of Land Use Alternatives, being conducted for the Wapiti River Basin, Peace River District; and, 3. Beef Production per Animal Unit for Typical Ranching Operations in southern Alberta.

Memoranda were prepared for the A.R.D.A. Branch on: 1. Costs and Returns of Land Development, Arable Grey Wooded Soils, in Census Division 14; and, 2. Suggested Economic Guidelines for a Proposed Land Development Program in northern Alberta.

Assistance was given with a survey of farmers concerning the benefits and costs of proposed flood control structure on the Pembina River. A note was prepared on the benefits and costs of a proposed Paddle River flood protection project. Spartan Air Services was engaged to carry out a comprehensive analysis.

ALBERTA FARM PURCHASE BOARD

K. G. TAYLOR, B.Sc., P.Ag., Chairman

H. ALLAM, P.Ag., Member

J. M. CURRIE, Member

P. D. STANLEY, B.Sc., P.Ag., Agricultural Consultant

Farm Purchase Credit Act

During the fiscal year April 1, 1966 to March 31, 1967, the Alberta Farm Purchase Board approved 499 applications, committing a total of \$6,514,856.96 in government loans.

There were 72 advisory committees operating at the end of 1967. The following is a list of the counties, municipal districts and improvement districts which have formed committees up to and including December 31, 1967, along with a list of applications which have been handled by the Alberta Farm Purchase Board since its inception in 1957. The figure in brackets shows the number of applications submitted to the board for the year 1967 only.

District	Applications Submitted to Board	Approved	Rejected	Withdrawals	Value of Farm Lands	Gov't. Loans to Boards
Athabasca	72 (9)	51	14	7	\$ 558,549.00	\$ 325,700.00
Barrhead	114 (12)	79	33	2	1,173,300.00	644,980.00
Beaver	208 (18)	166	37	5	2,176,868.80	1,061,561.44
Bonnyville	158 (18)	129	22	7	1,292,363.65	769,089.12
Camrose	206 (11)	172	28	6	2,564,565.00	1,331,810.00
Cardston	90 (11)	66	22	2	1,004,785.90	532,668.46
Flagstaff	133 (18)	117	12	4	1,658,825.00	919,925.00
Foothills	47 (2)	38	8	1	708,308.00	350,000.00
Forty Mile	93 (19)	81	11	1	1,241,723.27	724,636.63
Grande Prairie	78 (7)	59	16	3	752,300.00	408,950.00
Kneehill	22 (14)	18	4	.....	407,245.00	288,796.00
Lacombe	10 (1)	9	1	.....	150,538.00	77,365.00
Lac Ste. Anne	29 (1)	16	11	2	142,700.00	69,274.50

District	Applications Submitted to Board	Approved	Rejected	Withdrawals	Value of Farm Lands	Gov't. Loans to Boards
Lamont	194 (15)	160	26	8	1,698,290.00	874,001.17
Leduc	183 (16)	170	10	3	2,207,935.00	1,244,590.50
Lethbridge	118 (16)	76	40	2	1,439,810.00	820,637.00
Minburn	133 (10)	96	30	7	1,004,528.65	544,637.50
Mountain View	75 (4)	48	25	2	791,080.00	409,238.00
Newell	20 (6)	13	5	.....	203,900.00	122,460.00
Paintearth	177 (20)	160	13	4	1,562,597.20	909,916.00
Peace	3 (.....)	2	1	.....	29,000.00	14,500.00
Pincher Creek	16 (.....)	12	4	.....	256,442.00	134,750.00
Ponoka	135 (8)	94	31	10	1,227,550.00	598,895.00
Provost	10 (6)	8	2	.....	132,800.00	98,840.00
Red Deer	23 (5)	17	6	.....	400,140.00	253,112.00
Rocky View	100 (8)	86	13	1	1,501,587.95	781,637.95
Smoky Lake	(.....)	.....	.....	.....	.....	.....
Smoky River	95 (22)	75	19	1	800,080.00	477,800.00
Spirit River	(.....)	.....	.....	.....	.....	.....
Starland	61 (7)	54	7	.....	701,472.00	381,395.00
Stettler	53 (11)	42	10	1	720,554.20	430,350.00
Stony Plain	33 (4)	24	8	1	336,500.00	173,508.21
St. Paul	94 (18)	72	19	3	860,665.00	518,275.00
Strathcona	23 (3)	19	4	.....	285,950.00	139,807.00
Sturgeon River	73 (11)	47	20	6	740,370.00	408,531.00
Taber	(.....)	.....	.....	.....	.....	.....
Thorhild	95 (9)	74	18	3	769,560.00	406,260.00
Two Hills	98 (7)	77	17	4	585,400.00	311,400.00
Vermilion River	90 (9)	81	7	2	1,039,592.00	590,336.00
Vulcan	127 (14)	112	12	3	1,762,020.00	941,932.50
Wainwright	55 (4)	42	10	3	637,200.00	381,182.61
Warner	40 (3)	27	10	3	447,869.50	199,844.75
Westlock	293 (35)	217	72	4	2,675,918.50	1,467,428.50
Wetaskiwin	93 (11)	71	20	2	1,058,100.00	625,950.00
Wheatland	30 (3)	27	3	.....	463,669.00	249,575.00
Willow Creek	106 (9)	78	24	4	1,402,186.00	754,754.50
Special Area #2	118 (7)	106	9	3	1,134,260.00	616,673.00
Special Area #3	81 (7)	75	6	.....	934,060.00	506,040.00
I.D. #11	88 (17)	62	22	4	976,945.20	500,470.00
I.D. #22	7 (.....)	2	4	1	22,400.00	11,200.00
I.D. #42	(.....)	.....	.....	.....	.....	.....
I.D. #58	6 (1)	3	3	.....	49,000.00	30,500.00
I.D. #65	93 (9)	59	29	5	838,620.00	442,741.40
I.D. #77	3 (.....)	3	.....	.....	52,700.00	31,000.00
I.D. #78	17 (3)	7	10	.....	25,250.00	11,575.00
I.D. #95	7 (.....)	2	5	.....	17,000.00	8,500.00
I.D. #101	23 (6)	14	9	.....	145,800.00	89,792.00
I.D. #102	60 (1)	30	27	3	164,200.00	79,280.00
I.D. #107	11 (1)	9	2	.....	76,000.00	51,590.00
I.D. #108	4 (1)	3	.....	1	27,500.00	16,250.00
I.D. #109	3 (.....)	3	.....	.....	25,500.00	12,750.00
I.D. #111	(.....)	.....	.....	.....	.....	.....
I.D. #124	8 (1)	4	4	.....	27,350.00	13,675.00
I.D. #125	18 (.....)	12	6	.....	92,500.00	44,950.00
I.D. #126	13 (2)	9	3	1	121,500.00	82,650.00
I.D. #131	8 (1)	5	3	.....	56,200.00	36,460.00
I.D. #132	24 (1)	14	9	1	173,500.00	107,450.00
I.D. #134	17 (2)	12	4	1	82,000.00	45,000.00
I.D. #138	26 (2)	13	12	1	118,215.00	61,486.00
I.D. #139	10 (2)	5	4	1	73,250.00	53,425.00
I.D. #146	5 (.....)	2	3	.....	10,000.00	6,150.00
I.D. #147	1 (.....)	1	.....	.....	4,900.00	2,450.00
TOTALS—72	4561(506)	3542	882	137	45,053,187.82	27,731,253.74

Of the 3542 applications approved, 432 applications have been approved in 1967, with \$5,818,213.50 committed in loans for the twelve month period.

Due to heavy demand for credit the money in the revolving fund was depleted early in the fiscal year and as a result new applications had to be curtailed.

Advisory committees have been formed in all areas of the province with the exception of the municipal districts of Acadia Valley and Fairview.

The Alberta Farm Purchase Board held 31 meetings during the year, and have met a total of 267 times since the Act was passed in 1957.

Farm Home Improvement Act

The Farm Home Improvement Act was passed in 1959. During 1967 a total of 6 loans were made with a total value of \$18,303.00.

A total of 303 loans valued at \$505,724.00 have been made under this Act since inception.

REPORT OF THE ANIMAL INDUSTRY DIVISION

1967

W. H. T. MEAD, B.Sc., P.Ag., Director

DAIRY BRANCH

R. P. DIXON, B.Sc., M.Sc., P.Ag., Dairy Commissioner
 G. A. MacALLISTER, B.Sc., P.Ag., Supervisor, Dairy Plant Inspection
 A. A. HUGHES, B.Sc., P.Ag., Supervisor, Dairy Cattle Improvement
 E. S. BRISTOW, B.Sc., Asst. Supervisor, Dairy Cattle Improvement
 V. W. KADIS, Ph.D., Director, Dairy Laboratory
 Vacant, Supervisor, Frozen Food Plants
 W. A. McGRATH, Dairy Statistics and Chief Clerk

REGIONAL DAIRY SPECIALISTS

Calgary City W. E. Duncan, B.Sc., P.Ag.	Edmonton N.W. K. Spillar, B.Sc.
Calgary Rural L. C. Montgomery	Fairview K. J. MacDonald, B.S.A., P.Ag.
Camrose J. D. Rasmussen	Lethbridge A. O. Aspeslet
Edmonton City K. S. Anderson	Red Deer S. S. Paulsen
Edmonton S.W. J. R. Findlay, B.Sc.	Vermilion H. L. Beckett
Edmonton East D. J. Prince	

DAIRY LABORATORY SCIENTISTS

D. A. Hill, B.Sc., P.Ag.	W. E. Breikreitz, B.Sc.	R. V. Hodges, B.Sc.
O. J. Jonasson, B.Sc.	D. G. Howatt, B.Sc.	C. E. Hughes, B.Sc.

LIVESTOCK BRANCH

W. C. GORDON, B.Sc., P.Ag., Livestock Commissioner
 J. S. LORE, B.Sc., P.Ag., Livestock Supervisor (R.O.P. Beef)
 K. C. DAVIES, B.Sc., Asst. Supervisor (R.O.P. Beef)
 R. A. REDDON, B.Sc., M.Sc., P.Ag., Livestock Supervisor (Swine & Sheep)
 H. B. JEFFERY, B.S.A., M.Sc., P.Ag., Livestock Supervisor (A.I.)
 J. L. KERNS, B.Sc., P.Ag., Livestock Supervisor (Cattle)
 V. M. GLEDDIE, B.Sc., M.Sc., P.Ag., Livestock Supervisor (Sheep)
 P. J. MARTIN, B.S.A., M.Sc., P.Ag., Animal Nutritionist (Feed Testing)
 I. A. COLES, B.S.A., Supervisor of Feeder Associations
 H. M. LINK, Supervisor of Brand Inspection and Pounds
 L. BRINKHURST, Brand Recorder
 J. BELZER, Livestock Investigator
 H. G. PALLISTER, Brand Inspection Fieldman (Southern Area)
 R. W. BOGGS, Brand Inspection Fieldman (Northern Area)
 J. DROZDIK, Chief Clerk and Licensing

REGIONAL LIVESTOCK SUPERVISORS

Southern, G. A. Ross, B.Sc., P.Ag., Lethbridge
 North East, W. Dietz, B.Sc., P.Ag., Vermilion
 Peace River, J. B. Milne, B.Sc., P.Ag., Fairview

POULTRY BRANCH

R. H. McMILLAN, B.S.A., Poultry Commissioner
G. R. MILNE, B.S.A., Poultry Supervisor

REGIONAL POULTRY SPECIALISTS

Edmonton	K. H. Rowe, B.S.A., P.Ag.	Camrose	G. O. Johnson, B.Sc.
Edmonton	K. Darlington	Calgary	W. Hutchison
Fairview	Vacant	Lethbridge	G. E. Patsula, B.Sc.
Red Deer	J. L. Plumley, B.Sc., P.Ag.		

During the weekend of July 7th the Dairy, Livestock and Poultry Branch administrative staffs were moved from the Legislative Building and the 107th Street Building to the 4th floor of the 100th Avenue Building. This move consolidated all headquarters staff, with the exception of the Dairy Laboratory, in one office complex and assisted materially in the administration of the Division.

Significant changes in Division staff were the retirement of D. H. McCallum from the position of Dairy Commissioner and the appointment of R. P. Dixon to that position. Also the appointment of three Regional Livestock Supervisors at strategic points as related in the Livestock report, to introduce this Branch into the Departmental Regional structure.

Following is the Division report by Branches and Sections.

DAIRY BRANCH GENERAL REVIEW

Milk production during 1967 totalled 1,568,955,000 pounds, a decrease of 42.8 million pounds or 2.7 per cent as compared to 1966. The decrease in milk production was due to fewer cows being milked. A total of 235,000 cows were reported in milk in the June 1st census. This is a drop of 7,000 cows from 1966. Warm weather early in June brought pastures on quickly. Below average rainfall during the summer did not seriously affect hay and pasture crops due to high soil moisture reserves. Open fall weather permitted late grazing with a consequent saving in winter feed supplies.

The average milk production per cow was an all time high of 6,676 pounds, an increase of 9.8 pounds over 1966. Improved feeding and management coupled with more rigid culling were undoubtedly responsible for the increase. A total of 19,578 cows were tested under the Provincial Cow Testing Service with an average of 11,313 pounds of milk. This was an all time high for cows tested and production per cow. Over 33 per cent of the licensed fluid milk producers in the Edmonton area were under the provincial production testing program.

The estimated farm value of milk production totalled \$61,565,000.00 an all time high and an increase of \$5,322,000.00 over 1966. The farm value estimate included the Federal Government subsidy payments. From January 1 to March 31, 1967, the subsidy payment was 75 cents per hundredweight on milk or cream used for manufacturing purposes and was a direct payment to producers. In addition, producers supplying milk to the fluid

market were eligible for 75 cents per hundredweight on deliveries in excess of 120 per cent of fluid sales. On April 1, 1967, the subsidy assistance to fluid milk producers was dropped and the assistance to producers of milk or cream for manufacturing purposes was raised to \$1.10 per hundredweight. To the churning cream producers, this policy meant an increase of 31.42 cents per pound butterfat over and above the initial payment of approximately 66 cents per pound butterfat paid by the processor based on 63 cents a pound butter guaranteed by the Agricultural Stabilization Board. In June, the Agricultural Stabilization Board made a direct payment to producers of 2.7 cents per pound butterfat which was surplus to export requirements out of the 10 cents per pound butterfat holdback from the 1966-67 subsidy program.

The Canadian Dairy Commission introduced subsidy eligibility quotas during the 1967-68 subsidy year based on the previous years shipments. However, its intention to institute minimum quotas for subsidy payment was deferred until the 1968-69 dairy year.

The estimated plant value of manufactured or processed products amounted to \$65,323,000.00. This was a new high value and an increase of \$3,800,000.00 over 1966.

Creamery butter production was 33,396,000 pounds, a decrease of 1,147,000 pounds (3.5 per cent) from 1966. The higher price per pound increased the value to \$21,504,000.00 over \$1,000,000.00 more than last year.

There were increases in production and value for cheddar cheese and ice cream. Cheddar cheese production was up approximately 772,000 pounds and resulted in an increased value of over \$468,000. Ice cream production was up approximately 237,000 gallons with an increased value of over \$300,000.00.

Fluid milk sales were down approximately 2,600,000 pounds from 1966, but with the higher valuation showed an increased value of over \$1,532,000.00 more than in 1966.

There were increases in the percentages of total milk utilized for cheesemaking, fluid sales, farm home consumed and fed to farm animals; whereas lower percentages were utilized in the manufacture of creamery butter and concentrating.

The quality of Alberta creamery butter showed a slight improvement during 1967 with 97.2 per cent classified as "Canada First Grade." It is worthy of note to record that over 99 per cent of Alberta creamery butter production was graded in 1967.

Miss Janet Olesen of Daysland reigned as Alberta's Dairy Princess during the year and successfully retained the Canadian Dairy Princess crown at the national finals at the C.N.E. in Toronto on September 1, 1967. Miss Gaylene Miller of Dalemead presented the crown to Miss Olesen.

Staff Changes

Mr. D. H. McCallum, Dairy Commissioner, retired on June 14, 1967, after 29 years of service with the Alberta Department of Agriculture. Mr. R. P. Dixon, Assistant Dairy Commissioner, was appointed to succeed Mr. McCallum.

Mr. L. H. Arnold retired on June 30, 1967, after 20 years as Supervisor of Frozen Food Plants in Alberta.

Mr. E. B. Casement, Laboratory Scientist, resigned on September 1, 1967, to complete post-graduate studies at the University of Alberta. Mr. D. G. Howatt joined the staff on October 5, 1967, being assigned the duties previously carried out by Mr. Casement.

ESTIMATED FARM VALUE OF ALBERTA MILK PRODUCTION 1967

The quantity, price, value and utilization of milk production during 1967 is reported in the following table. To indicate changes for the previous year, the 1966 figures have been included.

	Year	Pounds	Milk Equivalent Pounds	Per Cent Total Milk	Price	Value \$
Butterfat for Creamery Butter	1967	27,051,000	781,466,000	49.8%	.927 per lb.	25,076,000.00**
	1966	27,980,000	808,306,000	50.1%	.801 per lb.	22,412,000.00**
Farm Dairy Butter	1967	978,000	22,885,000	1.5%	.59 per lb.	577,000.00
	1966	1,067,000	24,968,000	1.5%	.57 per lb.	608,000.00
Milk for Cheesemaking	1967		38,607,000	2.5%	3.19 per 100 lbs.	1,231,000.00***
	1966		29,935,000	1.9%	3.15 per 100 lbs.	943,000.00***
*Milk for Concentrating and Milk and Butterfat for Ice Cream	1967		140,688,000	9.0%	3.24 per 100 lbs.	4,563,000.00***
	1966		159,790,000	9.9%	2.91 per 100 lbs.	4,649,000.00***
Fluid Milk Sales	1967		289,958,000	18.5%	5.63 per 100 lbs.	16,316,000.00
	1966		292,585,000	18.2%	5.11 per 100 lbs.	14,956,000.00
Cream Fluid Sales (milk basis)	1967		64,741,000	4.1%	3.11 per 100 lbs.	2,013,000.00
	1966		66,737,000	4.1%	2.72 per 100 lbs.	1,817,000.00
Milk Farm Home Consumed	1967		134,260,000	8.5%	2.76 per 100 lbs.	3,706,000.00
	1966		134,850,000	8.4%	2.65 per 100 lbs.	3,574,000.00
Fed Farm Animals	1967		96,350,000	6.1%	2.76 per 100 lbs.	2,659,000.00
	1966		94,540,000	5.9%	2.65 per 100 lbs.	2,505,000.00
Kept on Farms, Skim milk from Creamery Butter and Skim milk and Buttermilk from Dairy Butter	1967	666,211,000			.49 per 100 lbs.	3,265,000.00
	1966	690,336,000			.49 per 100 lbs.	3,382,000.00
Federal Government Subsidy Entitlement Exclusive of Butterfat for Creamery Butter (estimated)	1967					2,159,000.00
	1966					1,397,000.00
Total	1967		1,568,955,000	100.0%		61,565,000.00
	1966		1,611,711,000	100.0%		56,243,000.00

*Does not include butterfat from creamery butter used in the manufacture of ice cream.

**Includes Federal Government Subsidy Entitlement.

***Does not include Federal Government Subsidy.

ESTIMATED PRODUCTION AND VALUE OF FACTORY DAIRY PRODUCTS

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during 1967 with corresponding figures for 1966 added for sake of comparison.

	Year	Quantity	Price	Value \$
Creamery Butter, lbs.	1967	33,396,000	.6439 per lb.	21,504,000.00
	1966	34,543,000	.5916 per lb.	20,436,000.00
Cheddar Cheese, lbs.	1967	3,103,000	.4652 per lb.	1,444,000.00
	1966	2,302,000	.4240 per lb.	976,000.00
*Ice Cream, gals.	1967	5,667,000	1.34 per gal.	7,594,000.00
	1966	5,430,000	1.34 per gal.	7,276,000.00
Fluid Milk Sales, lbs. (including processing charges)	1967	289,958,000	7.38 per 100 lbs.	21,399,000.00
	1966	292,585,000	6.79 per 100 lbs.	19,867,000.00
Cream as Milk, lbs. (including processing charges)	1967	64,741,000	4.86 per 100 lbs.	3,146,000.00
	1966	66,737,000	4.40 per 100 lbs.	2,936,000.00
Skim milk and Buttermilk Sales for Human Consumption, lbs. (including processing charges) ..	1967	21,518,000	4.18 per 100 lbs.	899,000.00
	1966	22,740,000	3.89 per 100 lbs.	885,000.00
Skim milk, Buttermilk, lbs.	1967	42,816,000	.49 per 100 lbs.	210,000.00
	1966	69,652,000	.49 per 100 lbs.	341,000.00
Whey, lbs.	1967	22,925,000	.25 per 100 lbs.	57,000.00
	1966	19,276,000	.25 per 100 lbs.	48,000.00
**Miscellaneous Manufactured Products	1967			9,070,000.00
	1966			8,758,000.00
Total	1967			65,323,000.00
	1966			61,523,000.00

*Includes hard and soft ice cream.

**Includes concentrated milk products, cottage cheese, whey butter, cheese other than cheddar and yoghurt.

BRANCH EXTENSION ACTIVITIES

Members of the Dairy Branch staff attended and addressed meetings and short courses on dairy production, feeding and herd management, the manufacture of dairy products and the processing and storage of frozen foods. Branch personnel served on various provincial and national committees and attended board meetings in connection with the numerous activities of the dairy and frozen food industries. Extension activities included dairy field days, judging at exhibitions, 4-H achievement days and provincial eliminations, Dairy Princess Competitions, the Edmonton Grassland Improvement Program and Cow Testing Workshops.

The Dairy Branch prepared and distributed monthly newsletters to producers and processors and circulars and bulletins to all segments of the industry. In 1967, a circular was distributed to all bulk tank milk producers advising the correct procedure to be followed in obtaining milk samples for bacteriological examination and quality tests. The Branch also collaborated with the Food Residue Committee on the preparation of a letter file entitled "Pesticide Residues can be Serious" for distribution to dairymen and livestock growers.

As a follow-up to an earlier proposal that producers of top quality manufacturing milk should be recognized, a plaque was

struck to be awarded to those producers obtaining a minimum score of eighty-five per cent based on premises and production methods. Eleven plaques were awarded to manufacturing milk producers in recognition of their achievement in producing top quality milk for use in the manufacture of cheddar cheese, milk powder and other concentrated products during 1967.

Examinations were conducted throughout the year to qualify candidates as licensed graders and testers of dairy products. To maintain satisfactory levels of proficiency, instruction and examinations were given to tank milk graders responsible for the pick up of bulk milk supplies from the farm.

Official weight certificates covering a total of 6,411 boxes and representing 3,660,966 pounds of butter were issued to Alberta butter processors availing themselves of the Canadian Dairy Commission support policy.

DAIRY PLANT INSPECTION AND INSTRUCTION

Dairy Plant Changes

A total of 104 licensed dairy manufacturing plants operated during the year as butter processing plants, fluid milk plants or combined butter and fluid milk operations. A number of changes occurred during the past year and are as follows:

January 2, 1967 — The Acme creamery operation of the Central Alberta Dairy Pool was closed.

January 20, 1967 — The Jasper Dairy Company Limited, Edmonton, resumed operations processing fluid milk and cottage cheese after the completion of extensive renovations and equipment modification. All processed milk was packaged in plastic cartons for distribution through Safeway stores.

April 1, 1967 — The Central Alberta Dairy Pool, Red Deer, initiated the production of spray-processed skim milk powder. On October 6, 1967, the new addition was officially opened by the Honorable H. E. Strom, Minister of Agriculture.

July 1, 1967 — The Central Alberta Dairy Pool, Hanna, ceased processing fluid milk supplies. On November 28, 1967, this plant discontinued the manufacture of butter, with churning cream receipts being transferred to Alix for manufacture.

July 5, 1967 — The Nanton Creamery which had been in operation since 1925 ceased operations.

September 15, 1967 — Cochrane Creamery discontinued home delivery of cartoned fluid milk from Calgary.

September 21, 1967 — The Northern Alberta Dairy Pool Limited at Barrhead poured footings for a milk processing plant which will produce butter and spray processed skim milk powder scheduled for completion in 1968.

October 10, 1967 — Potestio's Italian Foodland, Edmonton, resumed operations producing Italian type specialty cheese.

October 11, 1967 — The "Contimab" butter processing machine was put into operation at the Central Alberta Dairy Pool,

Red Deer. Early in October renovations were begun on the former poultry plant by Alpha Milk Company, Red Deer. When completed, this plant will be one of the most modern fluid milk processing plants in Western Canada.

November 1, 1967 — The Central Alberta Dairy Pool at Coronation ceased to process fluid milk supplies.

November 1, 1967 — The new cheese storage addition was completed and put into use by the U.I.D. Co-op Cheese Factory, Glenwood.

November 1, 1967 — The processing of fluid milk was discontinued by the Central Alberta Dairy Pool at Eckville. Supplies are now obtained from the plant at Rocky Mountain House.

November 9, 1967 — The bulk pick-up of fluid milk supplies was instituted in the Bonnyville and Grand Centre areas by the Northern Alberta Dairy Pool Limited.

December 1, 1967 — Churning cream receipts at Coronation and Elnora transferred from this date to Alex for manufacture into butter.

Inspection and Instruction

No changes took place in the dairy specialist staff. Plant inspections totalling 1,179 were carried out in 1967. Official check tests were made on 22,945 shipments of milk and cream for butterfat, while 59,101 lots of churning cream were officially checked for grade. Of the samples which were officially graded and tested by Dairy Branch personnel, 1.64 per cent required adjustment. Spot check-testing on the moisture content of butter was completed on 78 samples.

During the past year, extensive investigations were continued by Branch personnel to check the methods of bulk sampling at dairy farms, and the sampling and testing procedures as conducted at the plants.

Bulk Milk Handling

This method of handling fluid and manufacturing milk from farms to processing plants continued to expand during 1967.

The following table shows the number of farm bulk tanks installed in Alberta:

	1966	1967
Edmonton Milk Shed	456	456
Calgary Milk Shed	281	287
Lethbridge Milk Shed	50	52
Medicine Hat Milk Shed	21	22
Red Deer Milk Shed	18	18
Stettler Milk Shed	9	13
Evansburg Milk Shed	14	14
Grand Centre Milk Shed .....	..	11
Miscellaneous Fluid Milk Sheds	38	29
Camrose Manufacturing Milk	52	94
Red Deer Manufacturing Milk	22	62
Thorsby Manufacturing Milk .....	..	22
Wetaskiwin Manufacturing Milk	19	27
Miscellaneous Manufacturing Milk	17	15
	997	1,122

From the foregoing table, it will be noted there has been a substantial increase recorded in the number of bulk tanks installed by manufacturing milk producers particularly in the north-central portion of the province.

A total of 57 bulk milk transport trucks operated in Alberta for the pick-up of fluid and manufacturing milk supplies. With improved roads and milk handling equipment, the movement of milk supplies from surplus to deficient areas no longer constitutes a problem. Branch personnel continued to check all licensed bulk tank milk graders to insure that the regulations concerning bulk pick up and handling of bulk milk supplies were adhered to.

Quality Control

The dairy industry is committed to provide a continuous supply of high quality dairy products if it is to flourish. The Quality Control Advisory Committee of the Alberta Dairymen's Association made specific recommendations during 1967 concerning the production and processing of quality milk and dairy products.

The Federal Food and Drug Directorate continued to carry out spot checks on the bacteriological quality and sediment of industrial milk as received at cheese factories, condenseries and powder plants operating in the province. Personnel of the Dairy Branch continued to visit milk producers experiencing difficulty in complying with existing standards for manufacturing milk. Producer meetings were held in a continuous effort to improve milk quality at the farm level.

Alberta creameries entered a total of 118 butter samples at the Brandon, Canadian National and Royal Winter fairs in 1967. Alberta entries were awarded 166 first, 84 second, and 18 third place awards at the three exhibitions. Northern Alberta Dairy Pool Limited, Andrew, won the championship trophy for the highest scoring butter exhibit at the Brandon Exhibition. First and second prizes were awarded to Alberta cheese exhibits from Bruderheim and Thorsby plants at the same fair. At the Toronto Royal and the Canadian National Exhibition, the Central Alberta Dairy Pool, Hanna, won special awards for the best finished sample and also prizes for the highest scoring butter exhibit from the province of Alberta.

Annual competitions based on the commercial grading of butter and cheese throughout the year were supervised by the Branch. Commercial ice cream and cottage cheese samples were scored four times during the year by judging panels conducted at Edmonton and Calgary supervised by Branch personnel. To encourage good housekeeping and dairy plant improvement, all operating plants were scored by regional dairy specialists. The top scoring plants were rescored by headquarters personnel and the winners determined. A total of 52 plants scored 80 per cent or more and qualified for a merit certificate.

Licenses for 1967 with corresponding 1966 figures are listed below:

License

	1966	1967
Milk and Cream Testers Form "A"	255	262
Cream Graders Form "B(C)"	202	206
Plant Milk Graders Form "B(M)"	133	140
Tank Milk Graders Form "B(M)"	127	129
Dairy Manufacturing Plant Form "C"	110	104

Margarine and Imitation Dairy Products

The program of margarine sampling and analysis was continued and new cartons were examined for Ministerial approval. Further investigation with respect to color determination have been conducted using an apparatus known as a Reflectance Photometer. When standardization has been completed, this equipment will be used for color determination. Co-operation during 1967 from margarine manufacturers has been very satisfactory.

The following table indicates the extent of product scrutiny during the year and new cartons granted approval:

	Color Determination	Packaging	Composition	Cartons for Approval
Compliance	12	27	15	7
Non-compliance	7	2	1	..
Total	19	29	16	7

Branch personnel periodically checked retail outlets to ascertain if imitation products not previously defined and approved, were being offered for sale in contravention of the Dairy-men's Act.

DAIRY CATTLE IMPROVEMENT SERVICE

The principal activity of this section during 1967 was the Cow Testing Service. Visits to testing centres, correspondence and record analysis studies were carried out by the supervisor and dairy production specialist throughout the year. This section continued to co-operate with other branches and divisions in extension activities throughout the province.

The Supervisor of Dairy Cattle Improvement served on the Steering Committee for the Canadian Conference on Milk Recording. The conference was held in Ottawa, October 23, 24 and 25, 1967. The initiative for the conference was taken by Dairy Farmers of Canada in the belief that the financial returns of farmers and the dairy industry would benefit from more widespread use of milk recording, accounting and management programs. A central issue that emerged from the conference deliberations was the need for a unified milk recording scheme in Canada. The conference expressed a strong sense of urgency that rapid progress be made towards achieving this objective. A conference report was prepared and adopted by delegates to the conference.

Cow Testing

A total of 19,578 cows were tested by the Cow Testing Service in 1967, with an average production of 11,313 pounds of milk and 394.9 pounds of butterfat.

The 506 herds under test in 1967 represented an increase of 1,412 cows and four herds compared to the previous year.

During 1967, 102 new herds and 2,831 cows were placed under test, while 2,367 cows in 98 herds discontinued the service.

(a) Mail Order

This was the basic program offered to 290 herd owners throughout the province. Monthly milk samples were lifted by the herd owners from individual cows and forwarded to one of the testing centres for testing by Dairy Branch personnel. Two plans of cow testing were offered to herd owners. Milk from each cow was either weighed daily (Plan I) or weighed on one day a month (Plan II) by the herd owners.

The following table shows the number of herds and cows tested under the mail order system during the past three years.

	1965	1966	1967
Number of Herds	363	313	290
Number of Cows	10,203	9,155	9,299

From the above table it can be seen that there was a further decline in the number of herds tested under this program in 1967. The increase in the number of cows tested is a reflection of the trend to larger herds.

(b) Owner-Sampler Route Plan

This program operated in the Edmonton and Calgary areas. Under this program, a full-time fieldman visited each farm monthly and collected the milk samples lifted by the herd owners. Heifer calf identification and ear-tagging was carried out at the time of the monthly visits by the fieldman.

The following table shows the number of herds and cows tested under the Owner-Sampler Route Plan program by centres during the past three years.

	1965	1966	1967	1965*	1966	1967
	Edmonton			Calgary		
Number of Herds	134	136	155	42	53	61
Number of Cows	6,441	6,356	7,168	2,194	2,655	3,111

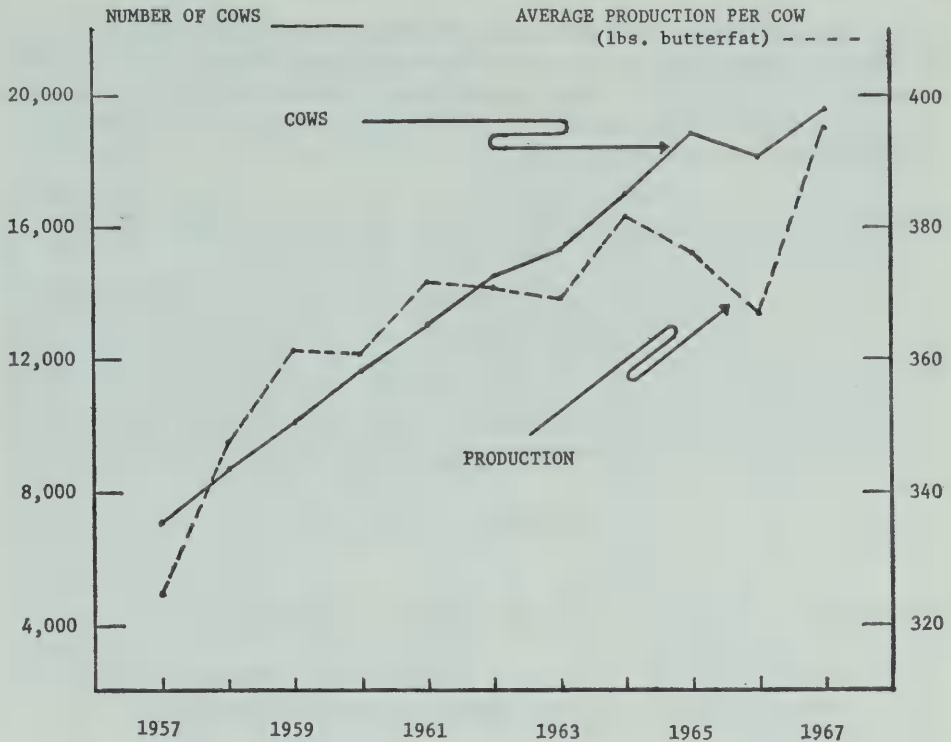
*Calgary Route Plan Program inaugurated June 1, 1965.

In the Edmonton area, there were a total of 19 more herds and 812 more cows tested under the Owner-Sampler Route Plan during 1967 than in 1966. The fieldman made 1,815 farm visits, eartagged 1,953 heifer calves and maintained calf record books for 145 herd owners during 1967.

A total of 23 new herds and 645 cows enrolled in the Edmonton Route Plan in 1967, while 11 herds with 398 cows discontinued the program.

The Calgary Route Plan Program enrolled 15 new herds and 682 cows, while seven herds with 319 cows discontinued the program. The fieldman made 898 farm visits, eartagged 384 heifer calves and maintained calf record books for 28 herd owners.

To illustrate the substantial growth of the Cow Testing Service and the level of production per cow during the past ten years, the following graph is submitted.



Testing Centres

Testing centres were in operation at the locations shown in the table below. Two full-time laboratory assistants did the testing at the Edmonton centre assisted by the fieldman. The samples at the Calgary centre were tested by the fieldman with assistance from the part-time clerical help. At the other centres, the resident dairy specialist tested or supervised the testing of the samples.

The following table shows the number of tests conducted at each centre during the past three years.

	1965	1966	1967
Calgary	17,726	23,811	24,190
Camrose	11,254	10,860	12,513
Edmonton	64,619	64,188	69,025
Fairview	2,724	2,094	2,168
Lethbridge	8,673	8,381	9,415
Red Deer	18,413	16,020	16,904
Vermilion	3,631	3,101	4,132
	<u>127,040</u>	<u>128,455</u>	<u>138,347</u>

A total of 9,892 more tests were conducted in 1967 than in 1966.

The following table summarizes the Cow Testing Service for 1967. Comparable figures for 1965 and 1966 are included.

SUMMARY

	1965	1966	1967
Number of Herds under test	539	502	506
Number of Cows under test	18,838	18,166	19,578
Average number of Cows per Herd	34.9	36.2	38.8
*Number of Cow Years	12,926	13,298	13,918
Average number of Cow			
Years per Herd	24.0	26.5	27.5
Average production of milk (lbs.)	10,665	10,547	11,313
Average production of butterfat			
(lbs.)	376.0	366.8	394.9
Average Test (%)	3.52	3.48	3.49

*Herd averages on the basis of cow years. The total number of cows on test during the year was used in determining the herd average, except where new cows were placed on test, or a cow was sold or died; in these cases, only that part of the year in which she produced was used.

The average production of all cows on test showed an increase of 766 pounds of milk and an increase of 28.1 pounds of butterfat during the year 1967 compared to 1966.

The 9,299 cows in the 290 herds on the Mail Order Program in 1967 showed an average increase in production per cow-year of 496 pounds of milk and 24.0 pounds of butterfat. The 10,279 cows in 216 herds on the Route Plan Programs, increased in production by 1,004 pounds of milk and 31.5 pounds of butterfat per cow-year. This astonishing increase in production was not entirely unexpected. Climatic conditions and quality of feed were both very much improved in 1967 compared to 1965 and 1966.

While the percentage of herds and cows under test in Alberta is very low, of the 429 licensed fluid milk producers shipping milk to Edmonton dairies during 1967, 33.6 per cent (144) were enrolled on the Provincial Cow Testing Program. An additional seven per cent of these herds were enrolled on the Federal R.O.P. Program.

Reports and Competitions

1. Annual reports, showing both total and average milk and butterfat production, were sent to all herd owners as well as to district agriculturists' offices.

2. An Honor Roll, listing all herds of 5 cow-years or more, and producing an average of over 400 pounds of butterfat, was compiled; herds were required to be under test for the entire cow testing year. A total of 168 herds qualified in 1967 as compared to 110 herds in 1966.

3. During 1967, graded certificates of production were issued for all cows completing the necessary production and recording requirements. Each herd owner was provided with a certified record book and these were recalled as necessary to allow the latest available production records to be added.

4. Production records were compiled on 428 first lactation daughters of A.I. sires in herds enrolled in the Edmonton and Calgary Route Plan Program of cow testing. This information was submitted to the Canada Department of Agriculture for use in their Sire Appraisal Studies. It was also used in the preliminary evaluation of young sires.

5. Higher production and herd improvement was encouraged through competitions sponsored by the Alberta Dairymen's Association. Financial assistance for prizes was received from dairy supply firms and all winners were determined by the Dairy Branch from cow testing records.

LABORATORY SERVICE

The laboratory continued its role of assisting food producers and processors, and at the same time provided safeguards for

the consumer by ensuring that dairy products and other foods met the standards established by federal, provincial and civic authorities. The laboratory services were available to provincial and civic government officials, food producers and processors, feed manufacturers and distributors, hospitals, and the consuming public.

As in the past, samples were submitted by Provincial Health Units, Dairy Specialists, Public Utilities Board personnel, processing plants, consumers, and other parties concerned. The samples were collected from producers, processing plants and retail outlets, and were analyzed for microbiological quality, chemical composition, presence of illegal toxic and non-toxic substances, such as antibiotics, pesticide residues, preservatives, detergents, sanitizers, added water in milk, etc. Following are the main services provided by the laboratory:

1. Chemical and microbiological analytical service for dairy products, eggs and egg products, water, honey and other foods.
2. Routine pesticide residue analysis and special analytical investigations on all types of foods, feeds, water, soil, wildlife, human and animal tissues, etc.
3. Surveys of the incidence of Q-fever in milk.
4. Milk and cream analyses for the presence of antibiotics, preservatives, detergents, and sanitizers.
5. Microbiological and chemical quality control of meat curing and pickling brines.
6. Analysis of milk for radioactive isotopes.
7. Consulting service to food industries, and provincial and municipal agencies concerning chemical and microbiological composition of foods, sanitation in the processing plants, restaurants, and retail outlets.

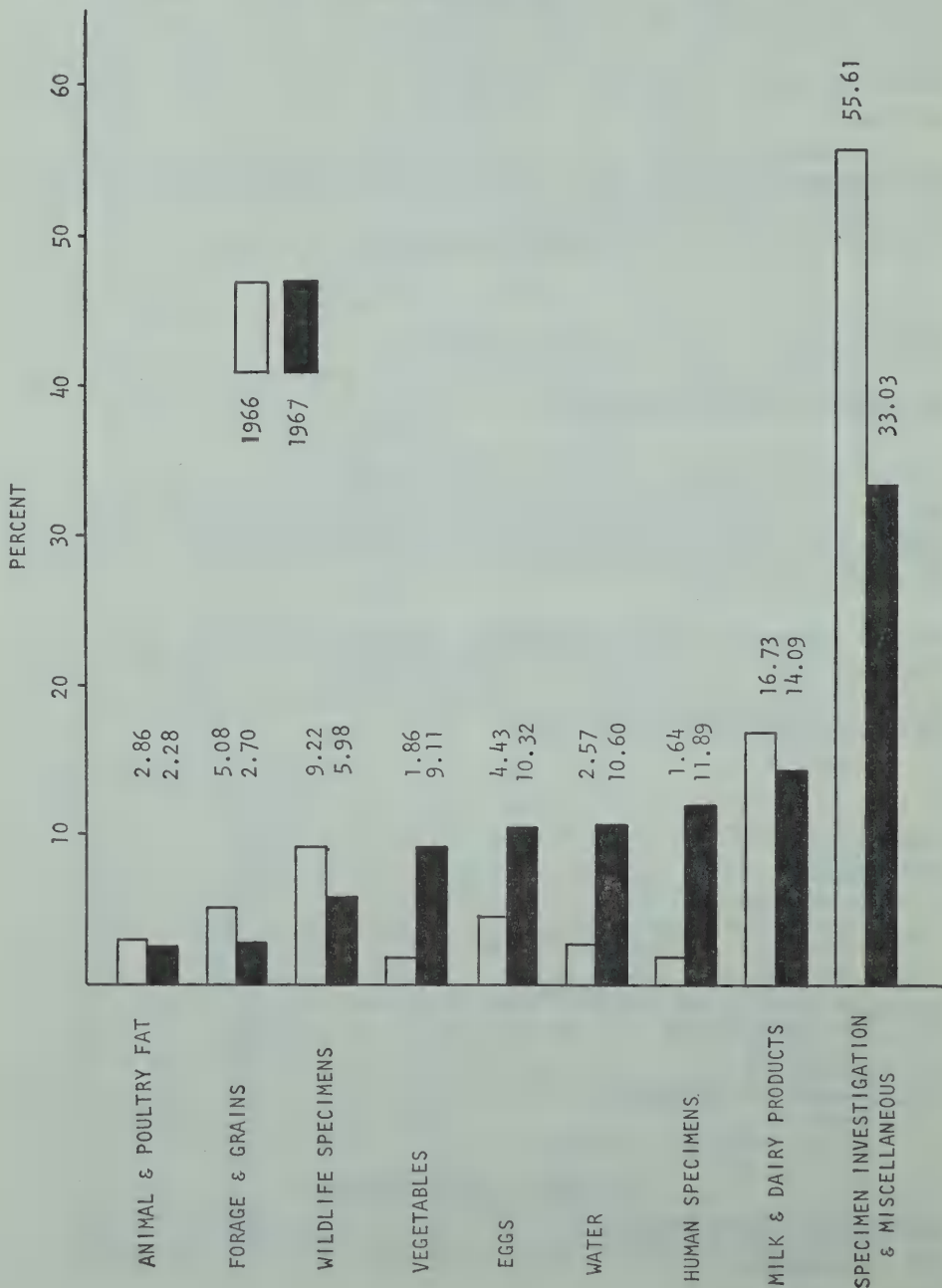
A total of 20,818 samples, involving 60,078 tests, were analyzed at the laboratory during 1967. The following table indicates the type and number of samples submitted and the number of analyses performed.

	No. of Samples Analyzed	No. of Analyses Performed
Milk and Cream	14,197	46,272
Butter	3,199	5,640
Cheese	206	1,036
Ice Cream	1,009	3,169
Dry and Evaporated Milk	29	115
Bacteriological Creamery Survey	26	130
Eggs and Egg Products	327	459
Meat Curing and Pickling Brines	85	505
Meat and Poultry	51	61
Vegetables	128	128
Wildlife	84	94
Forage and Grains	38	42
Water	172	195
Human Specimens (blood and tissues, etc.)	167	177
Soil	5	7
Washing and Sanitizing Compounds	216	421
Radioactivity in Milk	122	122
Miscellaneous	757	1,505

Due to increases in the type of samples submitted and the number of analyses performed, it was necessary to make certain changes in laboratory records and reports. For these reasons, no comparative figures can be given for the previous year.

In addition to microbiological and chemical analyses, a large number of milk samples were examined for the presence of antibiotics. It is interesting to note that of 6,186 milk and cream samples analyzed for antibiotics during 1967, only 54 (0.87%) were positive.

Screening tests for Q-fever were continued on raw milk obtained from dairy herds throughout the province. A total of 6,160 samples were tested and a detailed report was prepared for the provincial and federal health authorities.



The analyses of foods, feeds, wildlife, water, and other specimens for the presence of pesticide residues was continued. This program was carried out under the guidance and co-ordination of the Alberta Interdepartmental Committee on Pesticides, and therefore, the service was provided to all provincial agencies interested. Under this program, 1,405 specimens were analyzed during 1967. The following figure illustrates in percentage the type of specimen analyzed for pesticide residues in 1967, with the corresponding percentages for the previous year.

In February of 1967, the laboratory staff with the assistance of other members of the Alberta Department of Agriculture, organized and conducted the Second Pesticide Residue Analysis Seminar (Western Canada) in Edmonton. The seminar was restricted to persons directly involved in the pesticide residue testing field, and was attended by 26 pesticide chemists, representing federal, provincial and private laboratories from the four western provinces. Representatives from the Ontario Department of Agriculture and Food, the Federal Department of Agriculture and the Food and Drug Directorate, Ottawa, were also in attendance. Numerous topics, concerning analysis of foods, feeds, etc., for pesticide residues were discussed, and a great deal of information was exchanged by all participants. The proceedings of this seminar were compiled and distributed to pesticide chemists throughout Canada. Several copies were sent to laboratories in Europe and the U.S.

The laboratory staff participated in various local, national and international scientific meetings. In addition, some staff members chaired, or were active participants on various provincial and national technical committees.

FROZEN FOOD PLANTS

The administration of the Frozen Food Act, including the regular inspection of plants was continued as a Branch activity. During 1967, there were 964 inspections made by Branch personnel. Brine samples were lifted and tested for salt percentage and bacteriological quality by the Dairy Laboratory. Instruction on the preparation, processing, freezing and packaging of food products for storage continued to be an integral part of the service. Assistance was also given in planning new plants and renovating existing plants and slaughterhouses by field and headquarters personnel.

During 1967, four locker plants situated at Big Valley, Bowden, Carbon, and Stettler discontinued operations. The Beiseker locker plant was closed for three months, but has resumed operation under new management. Locker plant operations at Lamont and Warner were converted to processing plants. Processing plants at Halkirk and Woking ceased operations.

The Southern Meat Processing plant at Milk River was struck by lightning on June 16, 1967, and destroyed by fire. Ponoka Meat Packers, Ponoka, was destroyed by fire on June 23, 1967. Two new processing plants, Cattle King Meats Limited, Calgary, and Cattlemen's Quality King Meats Limited, Edmonton, were issued provisional licenses during 1967. The meat processing operation of R. Park, Lethbridge, was taken over by Lethbridge Lockers and Sea Foods Limited on October 1, 1967. At the end of the year, there were 89 locker plants, 51 specialized processing plants, and one animal food storage plant licensed under the Frozen Food Act.

The scoring of all plants for the Merit Award Competition and for Proficiency Certificates was carried out by Dairy Branch field staff. The top plants in each district were given a final score by headquarters personnel. In recognition of high standards of service, efficient operation and the maintenance of acceptable sanitary standards during 1967, Proficiency Certificates prepared by the Dairy Branch were awarded to 47 operators.

The shield for Section A (locker plants) was won by Drumheller Frozen Foods and runners-up were Rimbey Meat Processing Limited and Olson & Sons Meat Limited, Sexsmith. In Section B (specialized processing plants), Custom Meat Packers, Red Deer, was awarded the shield and Home Freezer Meats, Wetaskiwin, and City Meat Market, Daysland, placed second and third respectively.

The Centennial Curing and Sausage Competition was held during the week of July 23 - 29, 1967, in conjunction with Edmonton Klondike Days Exhibition. These competitions were sponsored jointly by the Edmonton Exhibition Association, the Alberta Provincial Swine Breeders Association and the Alberta Quick Freeze Locker Association. A total of 81 entries were received for competition in the seven different classes. Drumheller Frozen Foods, Drumheller, was awarded the Curing Trophy and Oszli Butchering Service, Innisfail, was awarded the Sausage Trophy.

The following tabulation was prepared from data supplied on monthly reports and covers the twelve month period ending November 30, 1967. For comparison, data for the previous year is included.

	1966	1967
Number of Specialized Processing Plants	49	51
Number of Frozen Food Locker Plants	95	89
Number of Animal Food Storage Plants	3	1
Number of Lockers Installed	16,969	16,536
Number of Lockers Rented	11,761	10,376
Percentage of Lockers Rented	69.3	62.7

Following the pattern of the past few years, the number of lockers rented continued to decline as several plants discontinued renting lockers. The volume of processing for lockers continued to decline while the volume processed for home freezers continued to increase. The total volume of processing (locker and processing plants) continued to surpass all previous years.

The following table shows the poundage processed by locker plants in addition to average poundage per plant:

Year	Volume Processed for Lockers	Volume Processed for Home Freezers	Poundage Per Plant
1963	4,994,961	12,131,243	150,230
1964	3,956,435	13,176,759	163,186
1965	3,298,034	12,327,077	173,262
1966	2,960,415	14,111,229	188,092
1967	2,504,085	14,742,301	218,887

The data above indicates the continued use by patrons of the processing services offered by the industry.

The following tables indicate the trend in the locker industry over a period of years.

LOCKER PLANT OPERATIONS

Year	No. of Plants Operating	No. of Lockers Installed	No. of Lockers Rented	Per Cent of Lockers Rented	Average lbs. Per Rented Locker
1945	61	16,770	13,572	80.9	326.0
1950	141	48,647	43,802	90.0	305.2
1955	153	51,488	43,608	84.7	307.9
1960	136	37,646	26,316	69.9	329.6
1965	102	19,537	12,901	66.0	256.2
1966	95	16,969	11,761	69.3	251.7*
1967	89	16,536	10,376	62.7	241.3

*Revised

Total Amount, Type and Percentage of Food Products Processed in All Licensed Plants

Year	Total Pounds Processed	Fresh Meat %	Cured Meats %	Land %	Fish %	Poultry %	Big Game %	Game Birds %	Fruits %	Veg. %	Misc. %
1960	18,509,247	77.8	9.6	1.2	.4	2.9	3.4	.1	1.5	1.9	1.2
1965	25,298,363	84.3	8.4	1.2	.3	.8	2.6	.1	.8	1.1	.4
1966	27,085,266	87.0	6.6	1.0	.1	.5	3.1	.1	.4	.8	.4
1967	30,644,182	85.9	8.2	1.2	.1	.5	2.8	.0	.3	.7	.3

MILK CONTROL REPORT

Submitted by the
PUBLIC UTILITIES BOARD

J. B. MOORE, Administrator of Milk Control

Increases or decreases in the consumption of fluid milk products in the various controlled areas for the calendar year 1967 were as follows:

Calgary	-1.9%	Camrose	-2.9%
Crowsnest Pass	-3.5%	Edmonton	N.C.
Lethbridge	+0.4%	Medicine Hat	-0.2%
Ponoka	+7.6%	Red Deer	-0.1%

2% partly skimmed milk continues to show increases in all areas. Camrose and Ponoka commenced the sale of both 2%, partly skimmed milk and skim milk during the year. Skim milk consumption decreased in Calgary, Edmonton and Red Deer.

Increases or decreases in milk production were as follows:

Calgary	+3.9%	Camrose	-3.0%
Crowsnest Pass	+1.4%	Edmonton	+3.6%
Lethbridge	-1.1%	Medicine Hat	+4.4%
Ponoka	+13.1%	Red Deer	+10.0%

Production per producer per day, in the Calgary area averaged 1,323 pounds, in the Edmonton area 1,074 pounds, Lethbridge averaged 1,716 pounds, while Medicine Hat averaged 1,231 pounds.

The total number of milk producers in the 9 areas declined by 32. Calgary lost 12 while Edmonton lost 18 of the 32. The decline in producer numbers represents a 4.7% decrease in the number of Calgary producers — a 4.1% decrease in the number of Edmonton producers. Cream producer numbers decreased by 9. The licensed distributor numbers remained constant at 24.

Six orders were issued during the year as follows: Order Nos. 28144, 28173, 28269, 28289, 28421 and 28462. Order No. 28173 establishes prices in all the controlled areas.

Hearings were held in Calgary, Crowsnest Pass, Edmonton, Lethbridge, Medicine Hat, Ponoka and Red Deer.

The Board continued its active and financial support of the Dairy Cost Survey and the several Milk Foundations.

Membership continued in the International Milk Control Agencies Association.

LIVESTOCK BRANCH

Factors governing livestock feed supplies were not as favorable in 1967 as they were in 1966. Feed grain yields were lower due to a very dry summer over much of the province. Hay yields were just fair but a good quality. Most areas appear to have sufficient feed but there will be very little surplus, especially in some east central and northern districts.

The very heavy and prolonged spring snowstorms (April 17th to 21st, April 26th to 29th, and May 9th and 10th), took a heavy toll of new-born calves, weaker cows, lambs and ewes in southern Alberta. The most severely affected area was that portion of the province south of a line through Claresholm to Brooks and southeasterly to Medicine Hat. Calf losses attributable to the storms were estimated to be 10 to 12% of the calf drop, with some individual herds losing more than 50%.

Cattle marketings at the public stockyards, packing plants and auction markets increased by approximately 0.7% from the previous year. Calf marketings at the same markets decreased by approximately 8.5%. The highest monthly average price for good slaughter steers on the Calgary market was reached in October at \$27.85 per cwt. The lowest monthly average price was \$24.15 in April.

Alberta hog marketings were up 15.7% in volume from 1966. Weekly marketings were heavy throughout the year and prices weakened somewhat during the last quarter. The lowest price of the year was \$24.00 per cwt. Grade A dressed in mid-November with Alberta marketings exceeding 30,000 head per week during that period. The high price for the Edmonton market in 1967 was \$30.30 reached in mid-May.

The June 1st survey estimated sheep numbers to be down 14,400 head, nearly 5% from 1966. The price level for good lambs remained quite stable throughout the year. Edmonton monthly average price was highest in June at \$23.76 per cwt. and lowest in September at \$18.67.

CATTLE

Cattle wintered well in all regions, but early spring storms caused considerable loss, particularly calf losses in some southern areas.

Early spring pastures were poor to fair in most areas but improved in June.

Summer grazing was generally good in the south but only poor to fair in east central and northern areas. Fall grazing conditions were poor in most areas. Fodder supplies appear sufficient in most southern areas but are short in some northern areas.

Cattle and calf population was estimated at 3,405,000 at June 1st, 1967 compared to 3,439,700 at June 1st, 1966.

Brand Inspection Record of Live Cattle and Calf Shipments Out-of-Province

	1963	1964	1965	1966	1967
British Columbia	54,459	50,308	52,564	56,244	45,479
Saskatchewan	2,686	2,063	3,431	3,622	2,637
Manitoba	6,960	4,712	13,914	11,574	3,949
Ontario	70,015	80,130	89,618	117,460	86,182
Nova Scotia	16			50	42
Quebec	1,105	2,904	7,622	15,948	15,476
New Brunswick	340	63	204	50	16
United States	27,143	10,920	45,906	30,769	3,504
Newfoundland		40			
Prince Edward Island				33	151
TOTAL	<u>162,724</u>	<u>151,140</u>	<u>213,259</u>	<u>235,750</u>	<u>157,436</u>

Breeders of registered beef cattle sold 3,580 bulls through 37 contributor sales approved by the Department for applications under the Cattle Improvement Policy B. Sales were held at the following points: Brooks (four), Calgary (two), Camrose, Cereal, Coronation, Didsbury, Drayton Valley, Drumheller, Edmonton, Empress, Fairview, Fort Macleod, Grande Prairie, Hardisty, High River (two), Lacombe (two), Lethbridge (two), Lloydminster, Mayerthorpe, Medicine Hat, Olds (two), Red Deer, Rimbey, Rocky Mountain House, Sangudo, Stettler, St. Paul, Vermilion and Westlock.

	No. Sold	Total Value	Average Price
Hereford	2,657	\$1,544,690.00	\$581.00
Aberdeen Angus	677	355,808.00	525.00
Shorthorn	246	124,850.00	570.00

Shorthorn bulls averaged eighty dollars more than in 1966 while Herefords and Angus were up in price thirty to forty dollars.

CATTLE IMPROVEMENT POLICIES

Bull Purchase Assistance

Policy A continued to be operated on the basis of bulls being purchased by the Department as required to fill orders as received from eligible applicants.

Policy B was unchanged and applied to the 37 contributor sales listed above.

The following table shows the placement of bulls under Policy A and the numbers of bulls on which the bonus available was claimed under Policy B for the past five years.

Year	Policy "A"	Policy "B"
1963	67	1,477
1964	53	1,478
1965	23	1,624
1966	37	1,350
1967	30	1,213

Record of Performance Testing Program

An Annual Report of the Alberta section of the Federal-Provincial Beef Cattle Performance Testing Program is printed at the termination of each year's results in June. Copies can be obtained from the Livestock Branch.

The following table shows the extent of participation by purebred breeders in the last five years:

Year	No. of Herds	Male Calves Weighed	Female Calves Weighed	Total Calves Weighed
1963	90	1,584	1,502	3,086
1964	96	1,853	1,747	3,600
1965	117	2,246	2,148	4,394
1966	145	2,809	2,789	5,598
1967	174	3,167	3,254	6,421

The Alberta Advisory Committee of Performance Testing met February 2, 1967, in Lethbridge. Recommendations of the Committee included:

1. Continuing the pilot progeny test program at least 1 more year.

2. Initiating a commercial beef cattle performance testing program.

Pilot Progeny Test Project

1. Phase I - 19 beef bulls were accepted in 1967 for semen collection under the progeny test project. The semen collection and processing was done at Vermilion College and 18 of the bulls produced satisfactory semen.

2. Phase II - Semen from 19 bulls collected in 1966 was distributed to 12 ranches in June, 1967, and bred to 481 cows. The Ontario Association of Artificial Breeders provided the service of distribution.

3. Phase III - Semen from 6 of the bulls collected in 1965 was bred to 195 cows in 7 co-operating herds. As reported last year, the semen was of low quality and only 27 calves were born with 24 surviving to weaning. Only 1 bull has enough progeny to warrant performance testing and this group of 10 calves is currently in the Progeny Test Station, Bassano, Alberta. In accordance with the original concept that the pilot project should not place any financial burden on the co-operators, the Department will contribute a grant of \$30.00 per test animal which is normally paid by the sire owner. This grant is in addition to the policy for assistance to Progeny testing beef sires reported in the 1966 annual report.

The Department initiated a Commercial Beef Cattle Performance Testing Program in 1967. The Requirements of the program are:

1. All calves identified at birth and birthdate recorded.
2. The dam and sire recorded as to breed and number, if known.
3. Minimum sex group of 10 animals born within a 90-day period.
4. Animals weighed at weaning and at 12 or 18 months of age.
5. The Department processes the records, supplies forms, provides limited supervision, and issues a detailed report to each breeder.

Fifteen commercial herds, with 705 calves, were weighed under this program.

Grants under the Department's municipal scale purchase policy were made to the County of Lethbridge, M.D. of Pincher Creek, M.D. of Stony Plain and Special Areas 2 and 3 Hanna.

Under the Department's policy of assistance to progeny testing of Canadian owned sires for beef production, a grant was paid to Alberta Beef Cattle Performance Association, as operator of the Bassano Progeny Test Station, covering three sire groups of 10 progeny per sire.

Artificial Insemination

Reports completed in 1967, covering 1966 breedings, show cow numbers inseminated by A.I. Units down 1,048 head com-

pared to 1965. Inseminations to dairy and dual purpose sires were down 532 head and to beef sires down 516 head. There were 11,743 vials of beef semen sold directly to ranchers who serviced an estimated 9,394 cows. Including direct semen sales, 92,039 cows were serviced artificially in 1966 for an overall increase of 1,346 or 1.5% over 1965. A growing interest in inseminating their own cows is evident amongst cow-calf operators. Four five-day A.I. Stockman's Courses were held by the industry with 61 stockmen enrolled.

Cows Bred Artificially through A.I. Units by Breed 1961-1966

	1961	1962	1963	1964	1965	1966
Holstein	42,326	46,645	48,013	45,931	44,421	44,367
Ayrshire	3,051	3,060	2,669	2,625	2,343	2,230
Guernsey	2,122	2,188	2,213	2,058	1,917	1,802
Jersey	3,103	2,944	2,876	2,479	2,587	2,214
D.P. Shorthorn	2,120	2,049	1,887	1,561	1,222	1,292
Red Poll	252	361	126	146	269	231
Brown Swiss	847	1,270	2,022	2,469	2,865	2,956
Not Separated				169		
TOTAL DAIRY	53,821	58,517	59,806	57,438	55,624	55,092
	1961	1962	1963	1964	1965	1966
Herefords	8,195	8,684	10,018	10,824	11,442	10,899
Angus	5,604	7,271	9,147	9,366	9,544	9,142
Shorthorn	2,652	2,074	2,110	1,970	1,823	1,671
Charolais	2,790	3,369	3,425	3,587	4,896	5,194
Not Separated				604	147	296
Other	81	512	270	212	217	351
TOTAL BEEF	19,322	21,910	24,970	26,563	28,069	27,553
TOTAL BREEDINGS ...	73,143	80,427	84,776	84,001	83,695	82,645
Percentage of Female Breeding Population	6.4	6.9	7.2	6.9	6.7	7.6
No. of Herds	7,940	9,287	9,572	8,664	8,481	8,550

Direct Semen Sales Report

	No. of Vials
Hereford	4,679
Angus	2,648
Shorthorn	68
Charolais	2,072
Brown Swiss	380
Holstein	310
Other Breeders & "not separated"	1,586
TOTAL	11,743

Licenses were issued for the operation of 46 inseminating businesses and 11 branch offices. One hundred and thirty-nine (51 Class I and 88 Class II) licenses were issued to technicians authorizing the insemination of domestic animals. Nine Class III and three Class IV technician licenses were issued authorizing respectively the collection and initial processing of semen and the collection and final processing of semen. Twenty-three permits for technicians to train were issued. Two semen producing business licenses were issued — one at Calgary and one at the Vermilion Agricultural and Vocational College.

The third post-diploma course in Animal Reproduction was carried out at the Vermilion Agricultural and Vocational College with fourteen students graduating. Six of these graduates were employed by the A.I. Industry. A 5-day in-service training course was held at Vermilion, attended by 12 Class I technicians of which eleven were upgraded to Class II.

There were 4 new inseminating businesses established in 1967.

The principles of sire evaluation were discussed with A.I. unit directors, managers, technicians and farmer groups. Unit reports for the first 11 months of 1967 showed 33,959 services to Holstein sires.

**Production Classification of Holstein Sires
by Comparison 1967 — (1966 figures in brackets)**

	Non- Proven	Natural or Preliminary Proof	Below -3		-3 to 0		0 to +3		Above +3		
No. of Services	5,395	(7,480)	1,919	759	(880)	5,499	(3,615)	4,923	(6,476)	15,465	(13,198)
Percentage of Total	15.9	(24)	5.7	2.2	(3)	16.2	(11)	14.5	(20)	45.5	(42)

In 1967, 60% of services to Holstein sires reported were to plus proven sires and 5.7% to sires with promising preliminary proofs. In 1966, 62% of the services were to plus proven Holstein sires.

Sources of semen by units for 1966 were as follows:

	First Services	% of Total
The Ontario Association of Artificial Breeders	47,504	58
The B.C. Artificial Insemination Centre	28,401	35
American Breeders Service	5,633	7

The average non-return rate for 1966 was 70.8%. Fourteen per cent of the cows were serviced to fresh semen and 86% to frozen semen.

Sixty-six meetings and short courses were attended with a total attendance of 1,274. Included were 14 A.I. Annual Meetings, ten A.I. Director Meetings, 5 regional A.I. technician meetings, 3 A.I. Stockman's courses, 21 extension meetings and 4 A.I. regulation and education committee meetings.

During 1967 sixty-two beef bulls were received at the semen processing laboratory at Vermilion for the purpose of collection and processing of semen. Twenty-five bulls were brought in from the Lethbridge Research Station of which 16 were successfully collected. There were 2,600 ampules and 4,100 pellets placed in storage. Nineteen bulls were brought in from various purebred breeders in connection with the Pilot Progeny test program. There are 3,270 ampules of semen in storage from 18 of these bulls.

Eighteen bulls (9 hybrids and 9 Herefords) were brought in from the University ranch at Kinsella for the purpose of evaluating the quality of semen from yearling bulls considering both weight and breed differences. It was necessary to study the feasibility of collecting semen from yearling bulls for the following reasons: (a) the possibility of gaining one year in time on progeny test information, and (b) to determine the feasibility of

integrating the semen collection and processing phase of progeny testing with the operations of a performance test station.

The mean age of both groups of bulls was 372 days. The hybrids outweighed the Herefords by 110 pounds (1,061 lbs.; 961 lbs.). Usable semen was obtained from 16 of the 18 bulls. Semen quality and quantity was considerably higher for the hybrid group than the Hereford group.

From the results of this study, it would appear that satisfactory semen quality in sufficient volume for progeny test work can be obtained from beef bulls at 50 to 60 weeks of age.

Horse Breeders Service, Petaluma, California have been successful in freezing horse semen. Several Inseminating Businesses made use of frozen horse semen for the first time in 1967. It is estimated about 40 mares were serviced and conception rate appears to be satisfactory.

Livestock Feeder Associations

Thirty-three feeder associations operated under the Feeder Associations Guarantee Act during the 1966-67 season. There were 1,229 active members who fed 46,317 cattle and 3,692 lambs, utilizing a credit of \$6,250,503.86.

Twenty-one associations operated under annual guarantee and twelve associations operated under continuous guarantee.

Loans outstanding at August 31st under the continuous guarantees totalled \$1,759,900.68.

1966-67 Feeder Association Operations

Association	No. of Members	No. of Cattle	No. of Sheep	Credit
Acme	53	2,377		\$ 306,564.50
Andrew-Willingdon	9	294		38,075.95
Barrhead	30	1,103		160,406.31
*Bashaw	80	2,470		299,219.36
Battle River	74	2,349		350,898.49
Big Valley	20	794		101,722.63
*Bowden	27	910		145,901.49
Bow Valley	32	950	1,741	138,611.24
Cardston	32	1,291		157,782.83
*Carstairs	35	1,731		232,150.53
Central Alberta	116	4,755	1,379	669,534.59
Central Peace	23	822		93,119.18
*Delburne	27	1,165		159,351.92
Drumheller	24	955		158,020.99
East Olds	40	1,713		216,873.63
Glenwood	8	287		43,700.95
*Grande Prairie	58	1,807		210,506.92
Innisfail	21	690		104,150.91
Knee Hill Valley	35	1,303		197,452.30
*Little Bow	53	1,870		242,599.20
Mannville	11	400		43,702.00
Marwayne	41	1,379		174,508.04
Meadowbrook	19	770		112,742.32
North Peace	24	502		55,908.94
*Okotoks	44	1,504		198,620.37
*Parkland-Stavely	51	2,292		303,907.82
Ponoka	45	1,491		244,955.28
*Raven	45	1,999		241,241.42
Raymond-Magrath	12	407	75	42,354.49
*Red Deer	46	2,021		267,869.01
Taber	34	1,271	497	192,371.75
*Vegreville	12	497		63,154.91
Western	48	2,148		282,523.59
TOTAL	1,229	46,317	3,692	\$6,250,503.86

*Associations operating under continuous guarantee

**Summary of Feeder Association Operation
covering the past five years**

Feeding Season	No. of Assoc.	No. of Members	Cattle	Sheep	Amount of Credit
1962-63	35	1,201	38,393	7,599	\$4,776,559.93
1963-64	36	1,492	51,382	5,067	5,854,345.80
1964-65	33	1,033	44,459	3,966	4,199,846.77
1965-66	33	1,101	45,143	3,910	5,158,097.85
1966-67	33	1,229	46,317	3,692	6,250,503.86

SWINE

The year 1967 was one of retrenchment and assessment for the pig industry in Alberta and in Canada. The downward trend in market price so evident at the close of 1966 continued, reaching a low of \$24.00 per cwt. for Grade A carcasses the middle of November. The high for the year was \$30.30 on May 18th and 19th, with the average return at Edmonton \$26.82. This was \$6.55 under the 1966 average, but slightly better than the 1957-66 10-year average of \$26.32.

The 1966 Alberta Hog Enterprise Analysis (published jointly by the Economics and Animal Industry Divisions) estimated the average cost of producing a market pig in this province at \$18.51 per 100 pounds of live animal compared to \$16.05 in the 1965 analysis. Once the market reaches the \$24.00 to \$26.00 range for Grade A carcasses, production costs and expected return become very close. The low in prices resulted from an overall increase in pig marketings in Canada of 19.3 per cent (15.7 in Alberta) for the year, paralleling a similar upswing in production in the United States. Total output in Canada exceeded eight million head slaughtered, the first time this figure has been attained since 1944. The floor price (based on a minimum of 80 per cent of the average Canadian price for the past 10 years) basis Edmonton was \$22.63 per cwt. for A grade carcasses.

Irrespective of the low average market price and the increased production cost, interest in pig production continued. The trend to the large specialized production unit was still evident; the 1966 Canada census listed 28,544 farms reporting pigs in this Province compared to 41,017 in 1961 and 45,643 in 1956.

The increasing interest in crossbreeding for commercial production prompted a number of operators in the province to establish operations to produce two and three-way cross animals (primarily gilts) for sale as breeding stock. The American Hampshire and Poland China breeds were sought after for use with our three white breeds. There was interest in other foreign breeds as well and in this respect an import-expert firm became operative.

Trippway Corporation, an American organization comparable to the American Hog Company, as well as Connaught Laboratories were still active promoting "complete production programs" but interest did not appear to be any greater than in 1966. S.P.F. as an approach to production was not extended. The Alberta Swine Herd Health Program listed 15 certified and 42 enrolled herds as of December 1st, a gain of 5 producers during the year.

Provincially, in 1967, the question of marketing received considerable attention from producer and industry groups. Nationally, it was the proposed change in grading or method of settlement to the primary producer by the buyers (primarily packers) of market animals. With marketing the impasse continued; one group insisting on a system where any number of selling agencies or individuals could offer pigs to a marketing commission while a second group was equally insistent on a single selling agency acting for all producers. Failure to reconcile this difference created a situation where, at year end, the Alberta Products Marketing Council, was preparing to get an expression of opinion from producers. Because of the stalemate over marketing the Alberta Swine Council (organized in 1964) continued as a provisional council. The Canadian Swine Council met as a body and jointly with the Meat Packers Council and the Federal Department of Agriculture a number of times, to further the "percentage yield of trimmed cuts" basis for rating market pigs. In this connection, a Canada-wide study of commercially produced pigs was undertaken in a number of packing plants in order to validate the research information on a yield system and to resolve some of the problems likely to be encountered in a major change in the method of grading and settlement. At year end, though, the A-B-C grading system was still in effect as was the \$3.00 Federal premium for carcasses of A grade.

The Alberta R.O.P. Swine Committee met twice with general agreement that the second test station had resolved the space problem for testing in Alberta. In 1966, four litters were home tested compared to 27 in 1965 and a 1961-65 average of over 30. The change in reporting R.O.P. test results instituted in 1965 is now well accepted. At year end the National R.O.P. Swine Advisory Committee appointed a committee of two to draft an outline for a combined progeny-performance test. This new approach to testing was prompted by such a procedure being instituted in the United Kingdom under the sponsorship of their Pig Industry Development Authority. Pilot projects to evaluate the feasibility of progeny-performance testing in Canada were initiated by the Manitoba and Alberta R.O.P. Swine Committees.

Under the National R.O.P. testing program during the period April 1, 1966 to March 31, 1967, sixty breeders (50 Alberta, 10 British Columbia) tested 274 litters in Alberta Test Stations. These were made up of 183 Yorkshire, 68 Lacombe, 20 Landrace and three Tamworth. All of the Landrace litters were from three breeders in British Columbia. The four home test litters (all Yorkshire) were from two breeders. A concern of R.O.P. breeders at the close of 1967 was the levying of a charge of \$3.00 per carcass by the packers for cutting R.O.P. carcasses. A protest voiced at a meeting of the National R.O.P. Swine Advisory Committee asked the Meat Packers Council to reconsider this charge but at year end it was still in effect.

The policies relevant to swine continued without any major change. A minor change raised the R.O.P. portion of the bonus under Swine Improvement Policy B to \$15.00 from \$10.00 for boars selling for \$100.00 or more. Details of animals placed and bonus payments are given in the accompanying tables. Included

also are tables giving comparative prices for breeding stock at the purebred sales and Alberta's position in the overall swine industry with respect to grades, pig numbers and value.

Price Average Covering all Alberta Sales (Including R.O.P.)

Breed	1966		Boars		1967		1966		Sows		1967	
	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price
Yorkshire	448	143.87	496	137.66	464	140.73	545	125.74				
Tamworth	12	97.50	8	125.67	1	102.50						
Landrace	3	105.00	5	110.00	6	91.25	7	102.85				
Lacombe	76	139.74	59	148.43	64	126.60	51	135.70				
Total and Av.	539	142.04	568	138.37	535	138.41	603	126.32				

Price Average for all Swine Breeds at Calgary and Edmonton Sales

	1966		1967	
	No.	Av. Price	No.	Av. Price
Boars	259	160.79	306	153.27
Sows	315	152.81	405	133.36

Price Average of Lacombe Breed Special Sale

	1966		1967	
	No.	Av. Price	No.	Av. Price
Lacombe Boars	11	104.09	Sale not held in 1967	
Lacombe Sows	22	101.47		

Price Average at Camrose R.O.P. Swine Sale

Breed	1966		Boars		1967		1966		Sows		1967	
	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Price	No.	Av. Price	No.	Av. Price
Yorkshire	48	161.04	44	149.43	34	117.41	38	106.71				
Lacombe	10	124.50	2	165.00	6	114.16	3	91.66				
Total and Av.	58	154.74	46	150.11	40	116.92	41	105.61				

Swine Placed Under Livestock Listing Bureau and Improvement Policies A & B

Year	Gilts	L.L.B.		Policy A	Policy B
		Boars	Boars	Boars	Boars
1963	13	25	106	373	
1964	4	7	93	405	
1965	39	19	94	332	
1966	2	15	84	347	
1967	6	14	84*	308	

*This total includes 47 Yorkshires, 30 Lacombe, 2 Tamworth and 5 Landrace

Record of Performance Sow Bonus Policy

Number of Sows Qualifying for Bonus:					
Breed	1963	1964	1965	1966	1967
Yorkshire	33	54	54	111	150
Landrace	1				5
Lacombe	22	18	26	61	25
TOTALS	56	72	80	172	180

Alberta Hog Gradings for Years 1963 - 1967

Grade	1963 %	1964 %	1965 %	1966 %	1967 %
A	35.10	36.30	40.30	42.80	40.2
B	42.90	45.20	43.00	41.00	42.4
C	7.40	8.20	7.10	6.70	7.6
Light	2.60	2.80	3.20	2.00	2.1
D	0.70	0.70	0.80	0.50	0.6
Heavy	4.40	4.30	3.50	4.50	4.7
Extra Heavy ..	1.80	1.90	1.50	1.80	1.9
Ridgling	0.60	0.60	0.60	0.60	0.6
Stags	0.40	0.50	0.45	0.40	0.4
Sows	4.10	4.70	4.20	3.60	4.0

1964, 1965, 1966 and 1967 grading percentages exclude stags and sows

Number and Value of Inspected Slaughter Hogs of Alberta Origin

Year	Total Number	Value per Pig	Total Sale Value
1963	1,350,490	41.22	55,667,363.00
1964	1,554,404	37.52	58,321,238.00
1965	1,634,390	44.44	72,635,358.00
1966	1,350,670	52.73	71,224,204.00
1967	1,562,856	48.76	66,198,759.00

Estimated Number of Swine on Alberta Farms at June 1, 1963-1967 Incl.

Year	Number
1963	1,165,000
1964	1,370,000
1965	1,245,000
1966	1,208,000
1967	1,254,000

SHEEP

The estimated number of sheep on farms in Alberta as of June 1st was down 5% from 1966. (Table I). Decreases in the sheep populations of census areas two, three, five and seven ranged between 5% and 9%, census area one and four held steady, and there was a 7% increase in area six. Lamb and mutton slaughterings originating in Alberta at 94,000, were up 6% from 1966.

TABLE I**Estimated Number of Sheep in Alberta at June 1, 1967**

Year	Number	Per Cent Decrease
1963	424,000	4.7%
1964	409,000	3.5%
1965	355,000	13.2%
1966	301,400	15.4%
1967	287,000	4.8%

Overall returns for sheep production in 1967 were average for the 1960's. The normal lamb price rise of the early months of the year was much slower than in previous years, nor were the high prices of 1965 and 1966 reached. However, in the last half of 1967 when larger volumes of lambs were marketed, prices were above average. Prices of "good" lambs on the Edmonton market peaked at \$23.76 per cwt. in June and reached the year's low at \$18.67 per cwt. in September. Wool sales were very slow in 1967.

Large sheep sales were held in 1967 in October at Brooks and Cardston, handling about 20,000 ewes and lambs (primarily feeders). Good feeder lambs averaged \$21.00 per cwt. but breeding ewe prices were very low — \$18.00 to \$20.00 maximum for good ewes with some as low as \$7.00 per head. Out-of-province buyers and orders were almost nil.

The numbers of rams sold at approved sheep sales in the province in 1967 increased markedly over 1966. (Table II). Part of this increase could be due to a new approved sale of rams held under the auspices of the North-Central Sheep Sales Committee in September. Ram prices were slightly better on the average in 1967 than in 1966.

TABLE II
Ram Numbers and Prices at Purebred Sheep Sales
North-Central (Edmonton), Edmonton & Calgary

Rams	1965		1966		1967	
	No.	Av. Price	No.	Av. Price	No.	Av. Price
Suffolk	79	70.54	74	74.90	77	71.00
Hampshire	17	55.74	13	72.04	16	91.00
Border Cheviot	1	50.00	1	50.00		
N.C. Cheviot	12	61.67	13	74.62	19	76.00
Corriedale	15	70.83	16	72.81	24	83.00
Southdown	2	65.00	1	60.00	3	55.00
Dorset					2	45.00
Oxford	2	49.00	5	67.00		
Romnlet					1	45.00
Total & Average	128	67.20	123	73.65	142	75.00

The number of ram applications processed were up markedly over 1966, (Table III) mostly an increase in Policy A applications. Ram bonuses available under Ram Policies A and B were increased from a maximum \$12.00 and \$8.00 to \$15.00 and \$10.00 on Grade A and B rams, respectively. Also raised was the minimum qualifying sale price from \$35.00 to \$45.00.

TABLE III
Applications Processed Under
Ram Policies A, B and L.L.B.

Year	L.L.B.		Policy A	Policy B	Total Rams
	Ewes	Rams	Rams	Rams	
1963	—	3	36	26	65
1964	—	3	34	35	72
1965	2	2	36	57	95
1966	134	4	35	51	90
1967	163	5	47	56	108

The average price of grade A rams decreased in 1967 while the average price of grade B rams remained the same.

The Federal-Provincial Sheep Freight Assistance Policy in force in several other provinces was made available to Alberta farmers in the fall of 1967. Seven applications were received on a total movement of 1,114 ewes. All ewes were purchased within the province with the exception of 400 bought in Saskatchewan.

TABLE IV
Average Price of "A" and "B" Rams
North-Central (Edmonton), Edmonton & Calgary Sales

Year	"A" Grade Rams		"B" Grade Rams	
	No.	Price Average	No.	Price Average
1963	42	64.94	31	50.46
1964	77	60.49	31	49.59
1965	83	70.58	45	59.00
1966	71	83.73	52	62.30
1967	125	77.00	17	62.00

Had the policy not come into effect so late in the year, it is anticipated that many more sheepmen would have benefited.

A new publication, "Sheep Production Pays", was prepared for publication in January of 1968.

The Livestock Branch co-operated with several organizations in the establishment of a series of sheep sales held at the Edmonton Stockyards under the name of North-Central Sheep Sales. The purpose of the sales was to provide a fair, competitive means of disposing of breeding stock and feeder and finished lambs. There was a total of five sales beginning in September and ending in November. About 2,500 breeding ewes were sold at the first two sales and a total of 6,000 lambs sold at the five sales. Prices were very good in relation to concurrent market quotations.

Regular sheep extension work was done in the form of servicing sheep schools and field days and consulting with individual farmers.

In spite of a severe setback to sheep raisers in southern Alberta in the form of losses due to late spring snowstorms and an ensuing dry summer for all of Alberta, the provinces' sheep industry generally appeared to enjoy an average year in 1967. There are various points in this report which give reason for optimism for 1968: the increase in marketings, the holding firm of lamb prices, the apparent increase in ram sales, and the taking hold of an industry marketing problem by the sheepmen themselves (North-Central Sheep Sales).

FEED RECOMMENDATION SERVICE

During the year, fifteen hundred and twenty-six feed samples were analyzed for farmers by the Agricultural Soil and Feed Testing Laboratory. Six hundred and ninety-one feed reports were issued. The District Agriculturists and Regional Supervisors submitted a further four hundred and ninety-one samples for analysis on a demonstrative basis.

Where ration information sheets were completed, ration recommendations accompanied the analytical results. Of the three hundred and forty recommendations made, two hundred and twenty-nine were for beef cattle, fifty for dairy cattle, fifty for swine, six for sheep, three for poultry and two for horses.

The new ration information sheets developed during the year proved to be successful in providing adequate information about the livestock feeding programs on the individual farms.

A new "Policy on Feed Testing" was introduced on August 1st, 1967. As a result of this new policy, feed sample kits may be distributed through members of the Alberta Veterinary Medical Association and feed dealers who are agents of members of Alberta Division of the Canadian Feed Manufacturers Association as well as District Agriculturists and municipal agricultural field men. Feed sample kits will be supplied at cost to veterinarians and feed manufacturers.

Under the new policy, a copy of a feed report may be sent, upon request, to a trade agronomist or a veterinarian.

The Agricultural Soil and Feed Testing Laboratory encourages District Agriculturists and Regional Livestock Supervisors to submit samples on a demonstrative or investigative basis where regional problems are involved.

As of August 1st, 1967, the fee for a regular feed analysis was increased to \$2.00. In cases where a regular analysis is requested, special analyses (Carotene, Nitrate, Prussic Acid, Ash or Crude Fat) are conducted for an extra charge of \$1.00 per analysis. When a special analysis alone is requested, the fee is \$2.00.

TORONTO ROYAL AGRICULTURAL WINTER FAIR

The 1967 Royal Agricultural Winter Fair was held November 10th to 18th. Alberta exhibited 14 carloads of cattle, one of swine and one of horses. Five sheep were included in the shipment.

Alberta's chief livestock awards were in the market and beef cattle divisions and included the Champion carload lot, the Reserve group of five and the Reserve Champion Hereford and Shorthorn Steer. The Grand Champion Hereford bull, the Reserve Champion Yorkshire boar and the Junior Champion Percheron Stallion were Alberta exhibits.

The exhibit was shipped from Edmonton November 1st and routed through Calgary via C.P.R. Market cattle dominated entries with 30 single steers, 6 carload lots and 7 groups of 5. One carload each of Aberdeen Angus, Herefords, Shorthorn and dairy cattle were also included in the cattle entries. Twenty-four swine and 14 horses completed the exhibit.

The Alberta Department of Agriculture received nominations, co-ordinated selection, assembled the shipment and provided feed and bedding to Toronto and return. The Canada Department of Agriculture paid 75% of the freight and the Alberta Department of Agriculture 25% as in previous years. Selection of exhibits was made by persons appointed by the various breed associations under the direction of the Livestock Board.

Special Achievements:

- McIntyre Ranching Co. Ltd., Magrath — Champion Carload of steers and Reserve Champion Hereford Steer.
- Warren Smith, Olds — Grand Champion Hereford Bull.
- Colin Darcel, Lethbridge — Grand Champion Sheep and two Champion awards in the wool fleece division.
- Henry Van Wert, Olds — Reserve Champion Yorkshire boar.
- Hans Stormoen, Fenn — Reserve Champion pen of five market steers.
- W. J. Boake & Sons, Acme — Reserve Champion Shorthorn steer.
- Wm. Gordon Young, Cayley — Jr. Champion Percheron Stallion.

The following table summarizes the prizes won by the Alberta exhibitors.

	Horses	Beef Cattle	Market Cattle	Dairy Cattle	Sheep	Fleece Wool	Swine	Total
Grand Champion		1	1			1		3
Reserves Grand Champion			1				1	2
Champion	1		1			2	1	5
Reserves			2			1		3
First	1	3	4			3	1	12
Second	2	3	4	2		1		12
Third	3	5	5		1	1	3	18
Fourth	4	1	3	1		1	4	14
Other Prizes	7	26	21	8	3		19	84

DAIRY HEIFER CALF POLICY

This policy operated as in previous years. The Branch assembled and delivered 105 Holstein heifer calves to 13 different 4-H dairy clubs.

Even though artificial insemination has become widespread in the province and the distribution of good quality dairy cattle has resulted, it was still difficult for many clubs in certain areas to obtain project calves locally.

HORSES

The June 1st, 1966 census showed a population of 93,700 horses on Alberta farms. This decreased 4% in 1967 to 90,000 head. Active interest was evident in the light horse industry but heavy horse numbers and values declined.

The horsemeat trade established the value of surplus horses.

There was a moderate demand for mares proven in-foal for urine production units in eastern Canada. Approximately 2,000 mares are on production in Alberta.

Auction markets, horse sales and horsemeat processing plants reported 20,700 head handled in 1967, an increase of 20% over 1966.

RECORDING OF BRANDS

Summary of Brand Registrations, Transfers, Renewals and Cancellations

	Cattle	Horses	Sheep	Poultry	Fur Bearing	Total
New Brands Issued	1,486	163	—	1	—	1,650
Transfers Registered	371	35	—	—	—	406
Certified Extracts Issued	2	—	—	—	—	2
Brands Cancelled	395	48	—	1	—	444
Brands Renewed	7,492	842	3	—	—	8,337
Brands Reissued	76	10	—	—	—	86
TOTALS	9,822	1,098	3	2	—	10,925

No. of Brands in good standing at December 31, 1967

Cattle	36,853
Horses	4,037
Sheep	21
Poultry	5
Fur Bearing	2
TOTAL	40,918

There were a total of 2,543 letters written during the year, which dealt with new applications, transfers, unregistered brands and other items pertaining to the work carried on in the Brand Office.

ALBERTA LIVESTOCK & LIVESTOCK PRODUCTS ACT

Stockyards and Stockyards Licensing

Three hundred and twenty stockyard licenses were issued in 1967, compared to three hundred and thirty-one in 1966. Classes of yards were divided as follows:

						Class	
B	C	D	E	F	G	Total	
17	25	58	2	4	204	320	

A total of 56 Class D stockyards (Auction Markets) were in operation at December 31st. One new yard was opened and two yards changed ownership.

The following table shows the number of livestock sold at Class D Stockyards during the years 1963 to 1967:

	1963	1964	1965	1966	1967
Cattle & Calves	424,551	470,330	514,327	559,379	604,411
Hogs	293,779	434,328	364,807	331,715	463,783
Sheep	31,797	30,336	32,470	32,375	33,665
Horses	9,729	11,505	7,597	8,725	9,989

Class E and F stockyards were operated at Lundbreck, Pakowki, Park Bend, Walsh, Lea Park and Empress and handled 12,459 head of cattle in 1967, compared to 16,225 in 1966.

LIVESTOCK DEALERS & LIVESTOCK DEALERS AGENTS

There were no amendments to the regulation.

Amendment to the act which became effective March 30th made provision for licensed dealers eligibility to benefits under the Livestock Patrons Assurance Fund. There were no applications for claims against livestock dealers bonds.

Dealers and agents licensed totalled 866 compared to 900 in 1966. A number of trade practice investigations were carried out as a result of complaints from producers, market operators and shippers. Routine stockyard visits were conducted as time permitted. There were nine prosecutions and several warnings relative to livestock dealing without licence.

THE STOCK INSPECTION ACT

Brand inspection was applied to four new points in 1967. They were Drayton Valley, Valleyview, Broxburn, and the packing plant at Medicine Hat which re-opened late in the year. There are now a total of 86 regular points of inspection. In addition, numerous inspections of export cattle were made at feedlots and loading points.

A total of 2,009,904 head of horses and cattle were inspected through markets and on export. This was a decrease of 3% from the all-time high inspections of 1966.

Inspectors held up proceeds of sale on actual animals for a total of 5,274 head for further investigation of rightful ownership. The proceeds of sale covering 189 head were forwarded to the Branch headquarters for further investigation. Of the total held, 132 head of live cattle and the proceeds from the sale of 272 head were returned to the rightful owner other than the shipper, and 25 head are still under investigation. Approximately 13% of the total number of cattle held were illegally shipped.

Two hundred and twenty Butchers and Hide Dealers' licenses were issued during 1967, an increase of four from 1966. Most butchers were visited at least once this year. Their premises and records were checked and discussed with them.

POUNDS

One new pound was organized under The Improvement Districts Stray Animals Act, bringing the total number of pounds in Improvement Districts to 156.

THE HORNED CATTLE PURCHASES ACT

The following table shows the percentage of cattle with horns at the main market centres for the past 4 years with a base point of 1949.

	1949	1964	1965	1966	1967
Edmonton	19.9	10.9	14.4	14.5	14.0
Calgary	15.6	5.6	7.0	7.9	7.1
Lethbridge	—	5.4	7.0	7.3	7.5
Medicine Hat	—	4.5	4.1	3.8	3.7

GENERAL

Regionalization

In keeping with the department's policy to establish 7 regional headquarters, where specialist assistance would be more readily available on a smaller area basis to assist in the general extension program of the department, the Livestock Branch made the first three appointments of Regional Livestock Supervisors in 1967. The points at which offices were opened were Lethbridge, Fairview, and Vermilion.

Committees

The following are the major provincial committees which are advisory to the department with respect to various program and policies and with which branch personnel are involved: The Alberta Beef Cattle Performance Test Committee, The Alberta Artificial Insemination Advisory Committee, the Alberta R.O.P. Swine Advisory Committee, The Alberta Livestock Board, and the Advisory Committee Soil and Feed Testing.

In addition, the Division Director served on the Executive Committee; a sub-committee of the Alberta Agricultural Co-

ordinating Committee; the Alberta Meat Industry Committee, and a special inter-departmental Sheep Grazing Investigational Committee set up to examine the possibilities of establishing grazing reserves for sheep.

Livestock Extension

The branch co-operated closely with the Extension and Colleges Division in applying and co-ordinating an effective livestock extension program. In addition to administration of the various livestock policies and programs, branch personnel serviced extension meetings, short courses, field days, production schools and livestock shows and sales.

The following is a summary of official duties conducted by branch personnel.

Farm Visits, 1,284.
Meetings and Short Courses, 327.
Livestock Judging Assignments, 56.
Culling and/or Purchasing at Sales, 65.
Stockyard Visits, 770.
Radio and TV Appearances, 41.
"Farm Notes" Articles, 45.

National Brand Conference

The 21st National Livestock Brand Conference was held in Calgary in July, 1967 with 16 of the 18 member states represented. Alberta and British Columbia are the only Canadian provinces who hold memberships in this organization. This was the first time the conference has been held in Canada.

Staff Changes

Numerous staff changes took place during the year. New appointments to the technical staff were: Regional Livestock Supervisors G. A. Ross, Lethbridge; J. B. Milne, Fairview and W. Dietz, Vermilion; K. C. Davies, Assistant Livestock Supervisor (R.O.P. Beef), Edmonton. New appointments to the brand inspection staff were: G. Florence, E. Weiss and G. Dykstra at Edmonton; W. Stafford at Calgary; D. Carey at Lloydminster. Deputy brand inspectors appointed were: J. Martin, J. Hanson, L. Sharkey, H. Bintz and A. Krieser. Terminating employment with the stock inspection service were: A. Brown, J. Butler, W. Franz and L. Cunningham.

GENERAL REVIEW POULTRY BRANCH

The year 1967 was not a good one financially for producers of commercial eggs. Such producers labored under an average weighted price for their product 7 cents a dozen less than 1966. The present average weighted price of 26 cents per dozen may be less than the cost of production on all but the most efficient plants. General farm run or mixed shell colored eggs continued to be discounted. Quality, white shelled eggs continued to be imported to meet demand for this product, this despite low average egg price.

The Federal Deficiency Payment continued in effect for 1967, however, as the weighted average paying price across Canada was above the stated minimum, no payment was required for the production period October 1966, to September 30, 1967. Because of depressed prices for the latter half of 1967 the Agricultural Products Board in July announced a program to purchase blocks of shell eggs for a limited period of time to attempt to stabilize prices.

Despite unfavorable conditions some expansion occurred. Fourteen specialized commercial units with 72,300 layers were noted, thirteen of these installed cages for 69,500 layers.

The chicken broiler market remained firm with some increase in marketings. The Alberta Broiler Growers Marketing Board established grower marketing quotas and grower prices.

The turkey industry showed some increase in marketings of both broiler and heavy types. Broiler turkey marketings did not adversely effect heavy turkey markets. With 200,000 more heavy type turkey poults placed as compared to 1966 some problems developed. Cold storage was extremely short, a result of competition of other food products and of slowness of movement to consuming markets outside Alberta. Tight money and the threat of importation of cheap live product from the U.S.A. were also contributing factors.

The Federal Government, in response to industry requests, applied value for duty on imported live turkey basis 19½ cents toms, 21 cents hens U.S. funds f.o.b. shipping point until January 31, 1968. This action provided short term protection at approximately the Canadian cost of production.

The Alberta Turkey Growers Marketing Board became operative in March and established grower marketing quotas and prices.

Egg marketings at registered stations are indicated in Table I. These receipts represent an estimated 47% of the total production comparable to 1966. Weighted egg prices to producers decreased 7 cents per dozen under 1966.

TABLE I

	Total Eggs 000,000 doz.	Reg. Stations 30 doz. cases	Producer Wt. Price	Layers (DBS)
1963	37.0	442,725	27.1	2,170,000
1964	38.5	486,597	21.8	2,280,000
1965	36.6	468,198	29.8	2,325,000
1966	37.9	475,487	34.0	2,769,000
1967 (est.)	41.0	522,000	26.0	2,842,000

TABLE II
Poultry Eviscerated in Registered Stations
(pounds)

Year	Chickens		Fowl	Ducks	Geese
	Under 4 lb.	Over 4 lb.			
1963	18,448,000	641,000	2,118,000	6,000	434,000
1964	21,962,000	1,108,000	2,434,000	19,000	457,000
1965	22,245,000	783,000	2,082,000	3,000	439,000
1966	25,400,000	999,502	2,253,739	1,084	112,000
1967	26,885,000	1,030,000	2,080,000	3,000	436,000

Year	Turkeys			Total
	Under 10 lb.	10 to 16 lb.	Over 16 lb.	
1963	750,000	4,446,000	8,248,000	13,444,000
1964	1,223,000	4,022,000	7,332,000	12,577,000
1965	1,455,000	4,418,000	8,383,000	14,256,000
1966	2,197,150	4,420,191	8,620,700	15,238,041
1967	2,666,000	5,090,000	9,803,000	17,559,000

LICENSING AND BONDING OF DEALERS IN
POULTRY AND POULTRY PRODUCTS

A. PRODUCE

The Poultry Branch administers regulations respecting the Licensing and bonding of dealers in poultry and poultry Products under the Livestock and Livestock Products Act. Every person carrying on a business as a dealer must obtain a license to conduct such business. As of January 1, 1956, as protection to producers, all wholesale dealers were required to furnish a surety bond in favor of the Minister ranging from \$1,000 to \$10,000 dependent upon the volume of business conducted.

TABLE III

Year	First Receivers	Reg. Egg Grading Stations	Reg. Poultry Processing Stations	Reg. Poultry Eviscerating Stations	Reg. Poultry Grading Stations	Temporary Grading Stations	Poultry Packing Stations
1963	10	119	19	11	7	0	9
1964	18	112	19	11	7	0	15
1965	22	95	14	11	6	0	21
1966	30	90	14	11	5	0	22
1967	22	71	3	11	5	0	15

B. HATCHERY

The Poultry Branch administers regulations respecting the production and sale of chicks under the Alberta Livestock and Livestock Products Act. All commercial and custom hatcheries with an incubator capacity of 1,000 eggs or more are licensed. Since 1951 commercial hatcheries are required to furnish a surety bond, in favor of the Minister, for protection of hatching egg producers, ranging from \$2,000 to \$5,000 dependent upon incubator capacity.

TABLE IV
Development of Hatcheries

Year	Breeder Hatcheries	Commercial Hatcheries	Setter Capacity	Hatcher Capacity	Total
1965	6	33	4,732,920	778,889	5,511,809
1966	6	33	4,721,200	789,544	5,510,744
1967	3	31	4,438,512	769,655	5,208,167

TABLE V
Chick Disposition

Year	Hatch-ability	Chicks Hatched	Chicks Not Sold	Chicks Exported	Chicks Imported	Chicks Remaining in Province
1963	70.2	15,070,648	1,091,460	606,641	879,505	14,252,052
1964	68.7	15,701,591	1,258,299	368,152	481,435	14,556,575
1965	67.4	15,081,002	1,279,299	597,039	617,057	13,821,721
1966	70.4	17,261,381	1,393,803	1,106,546	294,538	15,055,570
1967	70.3	17,168,275	1,625,053	960,943	634,367	15,216,646

TABLE VI
Chick Production by Type

For Egg Production Type			For Broiler Production Type		
1967	1966	% Change	1967	1966	% Change
5,514,467	5,715,160	-3.5	11,653,808	11,546,221	+0.9

TABLE VII
Poult Production

Year	Eggs Set	Eggs Imported	Poults Hatched	% Hatch-ability	Poults Imported	Poults Exported	Poults on Alberta Farms
1963	2,362,591	207,194	1,291,485	54.6	58,048	86,028	1,241,742
1964	2,099,610	463,444	1,136,876	54.1	41,946	48,499	1,130,323
1965	2,095,189	376,753	1,216,805	58.1	96,912	69,387	1,244,330
1966	2,434,267	587,738	1,261,153	51.8	20,250	75,522	1,205,881
1967	2,770,192	195,719	4,486,711	50.1	55,578	74,898	1,467,391

Poult production in Alberta hatcheries in 1967 was 1,486,711 poults, an increase of 15.1% over 1966.

Importation of U.S. franchised strains remained fairly static in 1967. These accounted for 80.7% of the White Leghorn type chicks, 85.0% of the chicken broiler type chicks, and 83.1% of the meat type turkey poults.

TABLE VIII
Importation From The United States
1967

	Chicken				Turkey			
	From Egg Production Matings		From Broiler Production Matings		From Meat Production Matings		From Broiler Production Matings	
	Eggs	Chicks	Eggs	Chicks	Eggs	Poults	Eggs	Poults
Jan.				21,603		25,600		
Feb.	3,744	6,500	35,139	20,022	74,390	3,000	15,800	340
Mar.	33,192	2,400	74,871	31,008	41,400	2,000	17,200	
Apr.	61,200	16,938	110,498	63,485	57,800		33,200	
May		7,110	55,056	62,301	37,600	19,200	28,000	
June	28,800	3,115		17,257		20,320	10,000	
July				16,587			7,000	2,200
Aug.		2,750		26,820			8,000	2,200
Sept.		2,818		14,662				2,200
Oct.				11,478			9,400	
Nov.		2,970		8,420			9,600	
Dec.				5,690			5,600	
TOTAL	126,936	44,601	275,564	299,333	236,790	44,520	143,000	4,740

FLOCK APPROVAL

The pullorum testing of chicken and turkey hatching egg supply flocks continued in 1967. Other than unusual circum-

stances, routine banding was discontinued. To handle the bulk of this work temporary inspectors were employed from September through December. Females tested for egg replacement purposes in 1967 were 8.1% less than 1966 and females tested for broiler production showed an increase of 10.0%. Turkey females tested decreased by 4.3%.

All hatching eggs set in licensed hatcheries must be from inspected and pullorum disease free flocks. Table IX summarizes the number of flocks and birds inspected and tested for pullorum disease.

TABLE IX
Flocks and Females Tested, Alberta
Egg Replacement and Broiler
(First Test on Completed Flocks)

Year	Method of Testing	No. of Flocks		No. of Birds	
		Egg	Broiler	Egg	Broiler
1966	Whole Blood	209	201	121,102	163,467
1967	Whole Blood	177	196	111,261	179,897
Average Size of Flock					
		Egg	Broiler	% Reaction	
1966		579	813	Nil	
1967		628	917	Nil	

Table X summarizes total turkey flocks and turkeys inspected

TABLE X
Summary of Turkey Approval 1965 — 1967

Year	No. of Flocks	No. of Birds	Average Size of Flock
1965	25	49,948	1,998
1966	21	52,140	2,482
1967	16	42,009	2,625

In 1967, 27.5% of the turkey hatching egg supply flocks were Broad Breasted Bronze, 52.0% Large Whites and 20.3% Small Whites as compared to 60.3%, 29.9% and 9.8% respectively in 1966.

PROVINCIAL POULTRY PLANT

New facilities in the form of a controlled environment laying house, and a combined office, laboratory and dwelling building were constructed.



With the completion of a decade of random sample egg production testing the previous year, the next projected period commenced with a nutrition-density study. This involves commercial Alberta feeds of different protein levels with both floor and caged egg-type chickens.

In addition, two random sample broiler feed tests were conducted at the plant. These tests, operated in consultation with the Canadian Feed Manufacturers' Association, Alberta Division, assess the broiler feeding programs of the primary manufacturers in the province.

BRANCH ACTIVITIES

The following table indicates the number of farm calls and meetings requested and attended by members of the branch.

Service Calls				Meetings			
1964	1965	1966	1967*	1964	1965	1966	1967*
1,659	1,478	1,548	1,225	37	39	89	65

In addition there were 460 calls to allied trade, 459 to surveys and studies and 3 to radio and TV.

*One regional office vacant 6 months of 1967 as no replacement available.

It is of interest to note that as producers entered or expanded to larger units branch personnel became much more deeply involved. They were asked to advise on initial planning, financing, choice of equipment, details of construction, analysis of production and marketing trends.

Poultry councils, producer associations, hatchery and produce associations continued active throughout the year.

The 17th Annual Poultry Industry Conference sponsored by the Alberta Hatchery Association, Veterinary Services Division and Poultry Branch was held in Edmonton.

Upon request by the poultry industry the branch continued publication of cost and situation data. Broiler Cost survey was broadened to give the results greater depth.

Specific programs were:

- 1) Broiler Situation Analyses
- 2) Broiler Cost Comparisons
- 3) Broiler Hatching Egg Cost Study
- 4) Commercial Egg Production Cost Study
- 5) Producer Vendor Survey
- 6) Hatchery Sanitation (Fluff Sampling)
- 7) Turkey Breeder Health Program
- 8) Egg Residue Survey
- 9) Paracolon Arizona Epidemiology Assessment
- 10) Marek's Disease Epidemiology Assessment

Mr. R. A. Stafford, Poultry Specialist, Lethbridge, left the branch by resignation June, 1967. Mr. G. Patsula, Poultry Specialist, Fairview, transferred to Lethbridge September, 1967. No replacement was found for Fairview.

POULTRY SHOW

The 53rd Annual Provincial Poultry Show was held in Calgary in December. There were fewer entries than in 1966, primarily a result of transportation of live poultry difficulties. Auction of dressed poultry netted satisfactory results.

The Vermilion-Mannville Turkey Club continued this year and held a successful dressed turkey show on its achievement day in December. Again, no live show was held.

The Poultry Commissioner attended the annual meeting of the Canadian Hatchery Federation and the Western Canada Produce Association. He and members of the branch served on committees of various organizations and attended many meetings of producer and industry groups.

ACKNOWLEDGEMENT

The division received excellent support and co-operation from both producer and commercial segments of the various dairy, livestock and poultry interests. It also enjoyed the full co-operation of the R.C.M. Police in matters of investigation and enforcement, and of the Federal Production and Marketing Service in matters of mutual concern. The assistance and co-operation of these agencies is much appreciated and is hereby acknowledged.

EXTENSION AND COLLEGES DIVISION

S. S. GRAHAM, B.Sc., P.Ag., Director, Extension & Colleges Division

HEADQUARTERS PERSONNEL

- L. W. RASMUSSEN, B.S.A., M.Ed., P.Ag., Supervisor of District Agriculturists
 C. A. CHESHIRE, B.E., P.Ag., Supervisor of District Agriculturists
 G. L. GODEL, B.S.A., M.Sc., P.Ag., Supervisor of District Agriculturists
 Mrs. V. G. MACDONALD, B.Sc., Head, Home Economics Branch
 Mrs. MARION ATKINSON, B.Sc., Associate Head, Home Economics Branch
 Miss PATRICIA MASCALUK, B.Sc., Home Management Specialist
 Mrs. DONNA BAGDAN, B.I.D., Home Design Specialist
 Mrs. DOREEN RADFORD, B.Sc., R.D., Food and Nutrition Specialist
 Mrs. MONA COX, B.Sc., Clothing Specialist
 Mrs. SHIRLEY REBUS, B.Sc., Assistant District Home Economist,
 Edmonton - Morinville
 J. L. REID, B.Sc., B.S.A., M.Sc., P.Ag., Head, Agricultural Engineering Branch
 B. S. WEST, B.Sc., Assistant Extension Engineer
 WARREN WISMER, B.S.A., M.S., Head, Information Branch
 JOHN ANDREW, B.Sc., Supervisor, Radio and Television
 Miss DIANA RODNEY, B.A., Agricultural Information Officer
 JACK ART, B.S.A., M.A., P.Ag., Research Information Officer
 Mrs. LINDA PICKELL, B.H.Ec., Products Promotion & Information Officer
 BURHAN AYANOGLU, Artist
 NORMAN A. POTTER, B.Sc., Commentator
 J. M. FONTAINE, B.Sc., P.Ag., Supervisor, Publications and Visual Aids
 W. R. MEEKS, B.A., Supervisor, Rural Leadership Training
 P. HLUSHKO, B.S.A., B.Ed., P.Ag., Supervisor, Rural Leadership Training

DISTRICT OFFICES AND PERSONNEL

Office and Agriculturist

Athabasca

R. Winchell, B.Sc.

Barrhead

W. C. Yule, B.Sc.

Bonnyville

D. L. Simpson, B.S.A.

Brooks

I. Lapp, B.Sc., P.Ag.

Calgary

P. Jamieson, B.Sc., P.Ag.

A. Reimer, B.S.A., (Associate)

G. W. Law, B.Sc., P.Ag.

Regional Extension Engineer

Camrose

L. D. Williams, B.Sc., P.Ag.

A. Lozeron, B.Sc.

Cardston

D. L. Steed, B.Sc., P.Ag.

Claresholm

J. D. Jantzie, B.Sc., P.Ag.

J. Yorgason, B.Sc. (Assistant)

Coronation

To be appointed

Drumheller

S. W. Pettem, B.S.A., P.Ag.

Edmonton, South

H. J. Fulcher, B.Sc., P.Ag.

A. Tilma, B.Sc. (Assistant)

Home Economist

Miss S. Hammer, B.S.

Mrs. N. J. Gray, B.Sc.

Mrs. I. Leavitt, B.Sc.

Miss D. Hammer, B.I.D.,

Regional Home Design Specialist

Mrs. E. Clarke, B.Sc.,

Regional Home Management Specialist

Miss I. Eby, B.Sc.

Miss P. Peters, B.Sc.

Mrs. M. Jubenvill, B.Sc.

Evansburg	W. A. Morrison, B.Sc.	
Fairview	W. L. Cody, B.S.A.	Miss J. Good, B.H.Ec.
Foremost	W. D. Jensen, B.Sc.	
Fort Vermilion	M. Rudakewich, B.Sc.	
Grande Prairie	N. G. Miller, B.Sc., P.Ag.	Miss I. Semeniuk, B.Sc.
	J. S. Hladky, B.Sc., P.Ag. (Associate)	
	A. Protz, B.S.A., B.E., P.Ag., P.Eng. Regional Extension Engineer	
Hanna	D. R. Macpherson, B.Sc., P.Ag.	Miss S. Wirick, B.S.
High Prairie	T. T. Newcombe, B.Sc.	Mrs. L. MacPhee, B.Sc.
High River	D. A. to be appointed	
Lac la Biche	A. J. Wiebe, B.S.A.	
Lacombe	W. L. McNary, B.Sc., P.Ag.	Mrs. H. Moore, B.H.Ec.
	D. Dowsell, B.Sc. (Assistant)	
Lamont	G. W. Shewchuk, B.Sc., P.Ag.	
Leduc	M. S. Kuryvial, B.Sc., M.Sc., P.Ag.	
Lethbridge	H. M. Douglas, B.Sc., P.Ag.	Miss E. Bartman, B.Sc.
	L. K. Bond, B.Sc., M.Sc., P.Ag. (Associate)	
	D. E. Darby, B.E., P.Ag., P.Eng. Regional Extension Engineer	
Medicine Hat	J. L. Anderson, B.Sc., P.Ag.	Miss C. Shunter, B.H.Ec.
	E. K. Nimitz, B.Sc. (Assistant)	
Morinville	S. C. Powers, B.Sc.	Mrs. M. Hemsing, B.Sc.
Olds	L. J. Welsh, B.Sc., P.Ag.	Miss J. Weber, B.Sc.
Peace River	G. R. McNaughton, B.Sc., P.Ag.	
Ponoka	C. C. Robinson, B.Sc., P.Ag.	
Provost	R. F. Berkan, B.S.A.	
Red Deer	R. D. Price, B.Sc., P.Ag.	Mrs. D. Carlyle, B.Sc.
	C. Mills, B.Sc. (Associate)	
	R. S. Forrest, B.E., P.Eng. Regional Extension Engineer	
Rocky Mountain House	F. H. Schulz, B.Sc.	
Ryley	R. J. Park, B.Sc.	
Sangudo	A. J. Charnetski, B.Sc., P.Ag. (Temporary)	
Sedgewick	D. A. to be appointed	
Smoky Lake	D. J. Christiansen, B.Sc.	Miss D. Denbow, B.Sc.

Spirit River	
W. Heggelund, B.S., Temporary Assistant D. A.	
St. Paul	
D. E. Berdine, B.Sc., P.Ag.	Miss S. Laird, B.Sc.
Stettler	
E. W. Walker, B.Sc., P.Ag.	Miss J. Laycock, B.Sc.
Stony Plain	
E. C. Lowe, B.Sc. G. Gillund, B.Sc. (Assistant)	
Strathmore	
A. E. Edwards, B.Sc., P.Ag.	
Taber	
J. G. Calpas, B.Sc., M.Ed., P.Ag. P. M. Thomas, B.Sc. (Assistant)	
Thorhild	
F. Strashok, B.Sc.	
Three Hills	
D. I. Peters, B.Sc., P.Ag.	Miss C. Young, B.Sc.
Two Hills	
W. J. Dent, B.Sc., P.Ag.	Miss I. Bradley, B.Sc.
Vegreville	
N. A. Chomik, B.Sc., P.Ag.	Mrs. E. Durie, B.Sc.
Vermilion	
J. S. Duncan, B.Sc., P.Ag. D. Lefsrud, B.Sc. (Assistant) R. Constable, B.Sc. Regional Extension Engineer	D.H.E. to be appointed
Vulcan	
B. R. Shaw, B.Sc.	Miss F. Cullen, B.Sc.
Wainwright	
N. W. Wohlberg, B.S.A., B.A.	Miss J. MacKay, B.Sc.
Westlock	
W. A. Ross, B.Sc., P.Ag.	Mrs. B. McCutcheon, B.Ed.
Wetaskiwin	
W. C. Proctor, B.Sc., M.Sc., P.Ag.	Miss L. McKinlay, B.Sc.

PROMOTIONS AND TRANSFERS

J. L. Anderson	—District Agriculturist II to District Agriculturist III, Medicine Hat.
J. R. Andrew	—Senior Commentator to Supervisor of Radio & Television
Mrs. M. Atkinson	—Clothing Specialist, to Associate Head, Home Economics Branch.
A. W. Beattie	—District Agriculturist III to Regional Agriculturist, Calgary.
R. F. Berkan	—District Agriculturist I, Camrose to District Agriculturist II, Provost.
S. R. Church	—District Agriculturist I, Lacombe to District Agriculturist II, Sangudo.
Mrs. E. Clarke	—District Home Economist, Olds to Regional Home Management Specialist, Calgary.
W. L. Cody	—District Agriculturist I, Vermilion to District Agriculturist II, Fairview.
Mrs. M. Cox	—District Home Economist, Hanna to Clothing Specialist, Edmonton.
W. J. Dent	—District Agriculturist II to District Agriculturist III, Two Hills.
W. Dietz	—District Agriculturist II, Coronation to Regional Specialist, Animal Industry Division, Vermilion.
H. M. Douglas	—District Agriculturist III, Lethbridge to Regional Agriculturist, Lethbridge.
J. S. Duncan	—District Agriculturist III, Vermilion to Regional Agriculturist, Vermilion.

- A. E. Edwards —District Agriculturist II, Sedgewick to District Agriculturist II, Strathmore.
- H. J. Fulcher —District Agriculturist III, Edmonton (South to Regional Agriculturist, Edmonton (South)).
- F. Graves —District Agriculturist II, Spirit River to Regional Resource Co-ordinator, Fairview.
- J. R. Gylander —District Agriculturist III, Leduc to Program Development Division, Edmonton.
- P. Jamieson —District Agriculturist III, High River to Regional Agriculturist, Calgary.
- W. D. Jensen —District Agriculturist I, Peace River to District Agriculturist II, Foremost.
- M. S. Kuryvial —District Agriculturist I, Taber to District Agriculturist II, Leduc.
- E. C. Lowe —District Agriculturist II to District Agriculturist III, Stony Plain.
- Miss L. McKinlay —District Home Economist, Athabasca to District Home Economist, Wetaskiwin.
- Mrs. H. Moore —District Home Economist, Stettler to District Home Economist, Lacombe.
- T. T. Newcombe —District Agriculturist I, Stony Plain to District Agriculturist II, High Prairie.
- J. B. Milne —District Agriculturist II, Fairview to Regional Specialist, Animal Industry Division, Fairview.
- R. J. Park —District Agriculturist I, High River to District Agriculturist II, Ryley.
- R. D. Price —District Agriculturist III, Red Deer to Regional Agriculturist, Red Deer.
- G. A. Ross —District Agriculturist II, Rocky Mountain House to Regional Specialist, Animal Industry Division, Lethbridge.
- F. H. Schulz —District Agriculturist I, Edmonton to District Agriculturist II, Rocky Mountain House.
- D. L. Simpson —District Agriculturist I, Leduc to District Agriculturist II, Bonnyville.
- Mrs. L. MacPhee —District Home Economist, Peace River to District Home Economist, High Prairie.
- E. L. Treffry —Writer and Agricultural Weather Forecaster to Regional Specialist, Plant Industry Division, Vermilion.
- R. L. Winchell —District Agriculturist I, Athabasca to District Agriculturist II, Athabasca.

APPOINTMENTS

- B. Ayanoglu —Artist, Information Branch, Edmonton.
- A. J. Charnetski —Temporary District Agriculturist II, Sangudo.
- F. R. Dawson —District Agriculturist I, Two Hills.
- Miss D. Denbow —District Home Economist, Smoky Lake.
- D. G. Dowswell —District Agriculturist I, Lacombe.
- G. M. Gillund —District Agriculturist I, Stony Plain.
- Miss J. Good —District Home Economist, Fairview.
- Miss S. Hammer —District Home Economist, Athabasca.
- W. Heggelund —Temporary District Agriculturist I, High Prairie and Spirit River.
- P. Hlushko —Supervisor, Rural Leadership Training, Edmonton.
- Miss S. Laird —District Home Economist, St. Paul.
- Miss J. Laycock —District Home Economist, Stettler.
- D. M. Lefsrud —District Agriculturist I, Vermilion.
- A. D. Lozeron —District Agriculturist I, Camrose.
- Miss J. MacKay —District Home Economist, Wainwright.
- Miss L. McKinlay —District Home Economist, Athabasca.
- W. R. Meeks —Supervisor, Rural Leadership Training, Edmonton.

C. J. Mills	—District Agriculturist I, Red Deer.
E. K. Nimitz	—District Agriculturist I, Medicine Hat.
C. D. Norman	—District Agriculturist I, Coronation.
Mrs. L. Pickell	—Products Promotion & Information Officer, Edmonton.
N. A. Potter	—Commentator, Information Branch, Edmonton.
Mrs. S. Rebus	—Assistant Dist. Home Economist, Edmonton-Morinville.
P. M. Thomas	—District Agriculturist I, Taber.
A. F. Tilma	—District Agriculturist I, Edmonton (South).
Miss J. Weber	—District Home Economist, Olds.
Miss S. Wirick	—District Home Economist, Hanna.
J. W. Yorgason	—Temporary District Agriculturist I, Claresholm.
Miss C. Young	—District Home Economist, Three Hills.

RESIGNATIONS

A. W. Beattie	—Regional Agriculturist, Calgary.
Miss M. Blades	—District Home Economist, Wainwright.
J. M. Bolstad	—District Agriculturist I, Medicine Hat.
S. R. Church	—District Agriculturist II, Sangudo.
F. R. Dawson	—District Agriculturist I, Two Hills.
Miss D. Denbow	—District Home Economist, Smoky Lake.
Miss J. Friedrich	—District Home Economist, Athabasca.
F. S. Goddard	—District Agriculturist II, Foremost.
W. Hooge	—District Agriculturist I, Red Deer.
F. X. Kehoe	—District Agriculturist II, Ryley.
Miss D. Kureluk	—District Home Economist, Wetaskiwin.
L. Malmberg	—Commentator, Information Branch.
C. D. Norman	—District Agriculturist I, Coronation.

RETIREMENT

K. H. Walker	—District Agriculturist II, Strathmore.
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PART-TIME ASSISTANTS

R. V. Archibald	—Instructor, Rural Welding Clinic.
A. Arthur	—Summer Ass't. District Agriculturist, Claresholm.
Miss S. Bard	—Summer Ass't. District Home Economist, Edmonton.
M. Bjorge	—Summer Ass't. District Agriculturist, Ponoka.
S. Edwards	—Instructor, Rural Welding Clinic.
W. Ganske	—Instructor, Tractor Maintenance School.
Miss S. German	—Summer Ass't. District Home Economist, Calgary.
Miss D. Hepburn	—Summer Ass't. District Home Economist, Red Deer.
J. L. Marr	—Instructor, Rural Welding Clinic.
H. Marten	—Summer Ass't. District Agriculturist, Stettler.
D. Pakan	—Summer Ass't. District Agriculturist, Vegreville.
Miss D. Parker	—Summer Ass't. District Home Economist, Peace River.
D. Pinchbeck	—Summer Ass't. District Agriculturist, Westlock.
M. Stoddart	—Agricultural Fieldman II, Barrhead.
D. Wilde	—Instructor, Tractor Maintenance School.

NEW OFFICES OPENED

Fairview	—District Home Economist Office.
Provost	—District Agriculturist Office.
Smoky Lake	—District Home Economist Office.
Three Hills	—District Home Economist Office.

OFFICE RELOCATION

	—Berwyn to Peace River.
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LEAVE OF ABSENCE

Miss J. Good

—District Home Economist, Fairview.

PROFESSIONAL IMPROVEMENT LEAVE**Post Graduate Studies**

J. G. Calpas
 C. A. Cheshire
 D. E. Darby
 H. M. Douglas
 L. W. Rasmusson
 D. L. Steed
 W. W. Wismer

Summer School (2-4 weeks)

C. A. Cheshire
 Mrs. Edna Clarke

Winter School (3-4 weeks)

Mrs. N. J. Gray
 I. Lapp
 Mrs. B. M. McCutcheon
 C. C. Robinson
 G. A. Ross

GENERAL

Positive and significant progress has been made in implementing the reorganization of the Extension Branches within the division. Regional Agriculturists have been appointed for five of the seven regions in the province. These include Lethbridge, Calgary, Red Deer, Edmonton and Vermilion. Regional offices are being developed for the Regional Agriculturists and the Regional Specialists with only Vermilion having separate and adequate office accommodation at the end of 1967. Some Regional Specialists have been appointed in all of the seven regions.

Complete operation of the new regional plan has been delayed because of the classification review under study by the Personnel Department for the whole of the year and not resolved by December 31st.

A major concern has been the transfer of six senior extension personnel to other divisions in the department. The resultant dislocation and interruption of programs, the very extensive recruitment effort to obtain new trainees, and the much greater time and effort required to train the relatively large number of replacements has affected our productive effort. The loss through transfer of senior personnel from Extension to other divisions may be considered somewhat of a mixed blessing. The training and experience gained by these workers should be invaluable to the division gaining these employees, to the whole Department, and the public they serve.

Staff training was intensified to help train the larger number of new personnel. A one-week group training program was held for all new professional staff. Also two regional office management courses were introduced and successfully completed. One-half of the professional staff participated in a one week intensive training course at Banff on leadership training and development. In addition, 25 employees from other divisions participated in the training program.

During the year our leadership training program has demonstrated its value and acceptance by department staff, rural farm families and agricultural organizations. Excellent co-operation has been experienced with the University Department of Extension.

Along with the reorganization of the department and our own division, five branches have been set up as follows: District Agriculturists, Home Economics, Agricultural Engineering, Information, and the Agricultural and Vocational Colleges Branch. Direct responsibility for the administration of each of the branches is assigned to the "Head of Branch". This designation replaced the former title of "Supervisors" of the branches formerly known as "Sections".

The Extension Branches of the division have had heavier demands for their services from the public than ever before. This has been interpreted, in part, as recognition of the personnel involved and the services they have provided. It is also recognition by farmers of the need for professional counsel and guidance in the increasingly complex business of farming.

Agricultural short courses and meetings conducted by extension personnel have taken on new importance and value. Most of these dealt in greater depth with one major subject, with several disciplines co-operating to instruct and demonstrate. One example was the dairy barn building schools with an Agricultural Engineer and a Dairy Specialist co-operating in the instruction.

The Agricultural and Vocational Colleges have achieved some remarkable advances during the year including the greater usefulness and acceptance of the revised or new courses offered and the progress made in improving and expanding the facilities and accommodation at each of the colleges. Details will be reported in the body of the report for the colleges.

DISTRICT AGRICULTURIST BRANCH

District Agriculturists work all over Alberta in the interest of agriculture and the welfare of its people, often behind the scene. Using a variety of extension media, they promote, co-ordinate, advise, administer, direct or assist in these things and above all, they teach. Their impact is beyond assessment.

These statistics indicate some trends in the direction of the present Extension Services. One positive trend is the smaller number of farm visits by extension personnel and the marked increase in the office visits and telephone calls. There are fewer numbers of meetings, but these meetings are in greater depth on one subject. The meetings are also attended by larger numbers. The backing of Regional Specialists is proving to be an important added strength to the District Agriculturists work in his district.

The magnitude of the involvement of District Agriculturists can be appreciated from the figures below for 1967:

Meetings and functions attended	5,946
Attendance at above	265,856
Individual contacts	146,313
Newspaper releases (in 90 papers)	1,325
Newsletters written	362
Radio talks	466
TV presentations	150

The compilation of provincial activities in the various programs follows. This year is contrasted wherever corresponding figures are available, with activities in 1966:

Plant Industry

	1966	1967
1. Crop Improvement (grain, forage and special crops)		
Meetings, demonstrations, tours, etc.	546	533
Attendance at above	14,835	17,345
Office interviews, phone calls	16,626	14,151
Farm calls		2,018
Seed Cleaning Plants assisted	62	91
Seed drill survey samples submitted	507	501
2. Soil Conservation		
Meetings, demonstrations, tours, etc.	400	274
Attendance at above	4,332	8,870
Office interviews, phone calls		13,926
Farm calls	8,065	1,819
Soil samples submitted for analysis	7,296	11,171
3. Weed Control		
Meetings, demonstrations, tours, etc.	349	108
Attendance at above	3,713	5,184
Office interviews, phone calls		6,990
Farm calls	6,533	594
4. Crop Pests and Diseases		
Meetings, demonstrations, tours, etc.	37	170
Attendance at above	1,225	1,629
Office interviews, phone calls		7,280
Farm calls	2,990	1,220
5. Horticulture		
Meetings, demonstrations, tours, etc.	137	146
Attendance at above	1,794	7,646
Office interviews, phone conversations	8,257	14,155
Farm calls		1,527
Trees ordered through D.A. offices	2,091,421	2,259,395
Farmstead plans	3,397	2,595
6. Beekeeping		
Meetings, demonstrations, tours, etc.	7	2
Attendance at above	330	65
Interviews, phone conversations		283
Farm calls	310	16

Animal Industry

	1966	1967
1. Livestock Improvements & Marketing		
Meetings, demonstrations, tours, etc.	272	444
Attendance at above	10,404	18,067
Office interviews, phone calls		15,750
Farm calls	9,261	2,307
Herds and flocks culled	279	165
Feed samples submitted	1,304	1,367
Herds assisted with R.O.P.		
Beef		219
Swine		35
Sheep		7
Dairy (Herds on test)		816
Livestock Placements:		
Horses	91	65
Cattle	1,756	1,607
Sheep	1,659	1,790
Swine	1,058	1,155
2. Animal Pest Control		
Meetings, demonstrations, tours, etc.	25	52
Attendance at above	882	1,552
Specimen submitted	117	792
Interviews, phone calls		2,027
Farm calls	1,310	297

3. Veterinary and Livestock Diseases

Meetings, demonstrations, tours, etc.	51	42
Attendance at above	1,847	1,810
Office interviews, phone calls		2,211
Farm calls	2,279	415
Specimen submitted	369	312

Interest in beef cattle is generally sustained in all regions excepting the Peace River where there is a substantial decline not only in cattle, but in all classes of livestock. Most regions report a decrease in the number of small hog herds, but a substantial increase in the size of the larger herds. Interest in sheep, dairy cattle and poultry keeps declining in most areas.

Inadequate nutrition remains the number one livestock problem reported by District Agriculturists.

Junior Activities

	1966	1967
4-H Agricultural clubs organized & supervised	393	397
Members enrolled in above	6,090	7,305
4-H functions attended by District Agriculturists	1,482	1,200
Attendance at above	74,483	77,595
Farm and Home Visits re 4-H	2,511	1,574
Office interviews, phone contacts	7,200	13,986
Demonstrations, talks given by D.A.'s	940	857

Transfer of the administration of 4-H Clubs from the Extension Branch to the Department of Youth effective September 1st, 1966, has not yet resulted in much easing of District Agriculturists' work. There were fewer meetings and functions attended and slightly less demonstrations given and a 40% drop in farm calls, but office interviews and phone transactions almost doubled.

Agricultural Economics

	1966	1967
1. Records, budgets, analysis		
Meetings, schools, etc.	332	275
Attendance at above	5,192	4,185
Interviews, phone calls, etc.	3,450	4,553
Farm visits	1,067	824
2. Income Tax, Estate planning		
Weekly school, etc	35	57
Attendance at above	1,783	4,104
Interviews, phone calls, etc.	473	1,644
Farm visits	89	127
3. Father-Son Agreements, leases, etc.		
Meetings, schools, demonstrations	19	10
Attendance at above	671	350
Office interviews, phone calls	542	614
Farm visits	142	107
4. Marketing		
Meetings, schools, etc.	15	23
Attendance at above	846	513
Office interviews, phone calls	601	623
Farm visits	183	72
5. Miscellaneous, general economics		
Meetings, schools, etc.	60	140
Attendance at above	2,059	3,653
Office interviews, phone calls	1,143	3,905
Farm calls	300	585

6. Individual, family and group participation in more intensive farm management programs

Individual contacts		
Farm calls	1,760	1,715
Office calls	6,291	11,339
Study groups		
Number of groups	116	104
Families in groups	834	1,059
Families worked with	2,323	

Interest in most phases of agricultural economics remained somewhat the same or slightly less than in 1966, with exception of estate planning and income tax, two subjects where the demand could not always be met and remained very high.

Agricultural Engineering

	1966	1967
1. Buildings		
Meetings, schools, tours	41	61
Attendance at above	1,583	2,052
Office interviews, phone calls	3,321	3,979
Farm calls	1,004	753
2. Water, Sewers, Utilities		
Meetings, schools, tours	25	39
Attendance at above	1,437	1,108
Office interviews, phone calls	2,323	4,462
Farm calls	695	615
3. Drainage & Irrigation		
Meetings, schools, etc.	22	28
Attendance at above	1,211	875
Office interviews, phone calls	936	1,639
Farm calls	361	411
4. Farmstead Mechanization planning		
Meetings, schools, etc.	30	53
Attendance at above	3,295	3,368
Office interviews, phone calls	895	2,020
Farm calls	253	632
5. Machinery		
Meetings, schools, etc.	28	18
Attendance at above	794	1,288
Office interviews	959	936
6. General, Miscellaneous		
Meetings, schools		32
Attendance		833
Office interviews, phone calls		1,424
Farm calls		149

Interest in engineering centered mostly around drainage, materials handling and large, fully automated swine housing. In the Peace River district interest in wells was high. Because structures are more elaborate than ever, much of the demand was for individual attention.

Other Activities

Few people realize the amount of time which District Agriculturists have to spend at meetings where they represent the Department of Agriculture either as a member of the board or in the interest of better public relations. To the 1,498 meetings and 343 tours and demonstrations listed in Sections 1 and 2, of "other

	Farm Calls	Office Interviews, Phone calls	Meetings, tours, demonstrations
1. Advisory Committees, ANDA			
Agricultural Committees of council, A.S.B.	115	1,141	339
Improvement District, Special areas	8	128	43
Council meetings	24	195	95
Advisory committees of			
Agricultural Committees	82	431	100
Planning Commissions	7	149	53
F.U. & C.D.A.	17	366	82
ARDA	49	1,027	90
Other advisory	77	691	65
TOTAL	381	4,128	867
2. General Extension			
Agricultural Societies	104	1,225	159
Fairs	80	760	103
Tours	67	290	29
F.U.A. General	28	296	72
Chambers of Commerce	15	366	122
Service Clubs, churches		150	155
Phones, R.E.A.	5	90	1
Sociology other than in 4-H	99	565	208
Miscellaneous	341	3,484	125
TOTAL	739	7,226	974
3. Participation in Professional Improvement			
	207	1,676	414

activities", must be added all the meetings already reported with youth activities, livestock and seed growers associations, seed cleaning plants, etc. The situation is especially bad at the larger centers of population.

Add meetings for self improvement listed under Section 3, and all farm visits and office interviews, and one can readily see that there would be no time left for actual education through teaching were it not for the fact that much of the extra work is conducted in the evening.

HOME ECONOMICS BRANCH

Home Management

	No.	Attendance
Lectures and Demonstrations	298	6551
Home Visits	58	
Home Management Groups	7	
Home Management Group Meetings	24	
Farm and Home Program (groups)	9	
Accounting Groups	7	
Families assisted in welfare	62	
Persons otherwise assisted	3600	

The complexity of our market with many products and the increase in living costs brought about a marked increase in individual requests for information on living costs in every category of family spending, buymanship of large and small household equipment, budgeting, and record keeping.

District Home Economists co-operated with, or worked separately in organizing and addressing 135 short courses attended by 7,345 persons. There were 26 field days and tours attended by 1,618 and 104 meetings (1,316 present) to plan district events.

At 119 meetings, attended by 4,309 persons, topics were mainly related to family living, such as:

"Youth, the Family & Community"	"Education for Married Life"
"Family Life Education for Teenagers"	"Children & Study of UNICEF"
"Family Living Series for Teenagers"	"Etiquette for Special Occasions"
"The Elderly and Retirement"	"Family Festive Occasions"
"Emotional Security"	"Centennial Receptions & Balls"
"Continuing Education & Careers"	"Social Graces"
"Planning for Self Improvement"	"Successful Programs & Meetings"
"Your Home & Coming Child"	"So You're Giving a Speech"
"The Way to Decide"	"Women's Rights and Their Place in the Home"

Individuals assisted re the above 836

Various phases of horticulture were dealt with at 29 meetings, 3 short courses, 19 tours, attended by 1,539 persons, 18 home visits were made and 385 persons were otherwise assisted.

District Home Economists arranged 23 exhibits at conventions and special events. Other special functions such as banquets, etc. (public relations) attended by District Home Economists numbered 422.

Services of this branch were outlined at 186 meetings attended by 6,678. Agricultural and Vocational College courses were outlined at 29 meetings and information given 2,880 persons.

Information & Publicity

Home Economists reported mass media, especially radio and TV, proved effective in reaching individuals and families not aware of extension programs. An increase in requests for information by telephone and letter was reported due to this wider contact.

	1966	1967-
Newspaper articles written	995	1,087
No. of newspapers using articles	116	100
Newsletter written & 4-H Newsletters	157	186
Total average circulation	17,633	38,685
Radio Releases	108	118
TV Releases	25	36
Radio Talks and Interviews	250	215*
TV Talks, Demonstrations & Interviews	77	108
Total Viewing Audience (est. by 5 TV Stations)		140,000
No. of circulars written		1,279
Total average circulation of circulars		9,356

*Home Economist appointed to Information Branch reduced talks given by headquarters staff.

Summary of Activities

	1966	1967
Demonstrations, Lectures, Field Days & Short Courses	3,117	3,227* ¹
Attendance		100,683* ²
Fairs & Conventions	148	174
Letters requesting information	17,692	17,844
Home Visits	2,162	2,069
4-H Girls' Clubs, Summer		58
Winter	205	193
Office Interviews	7,154	7,034
Phone Calls for Information	18,857	20,616

*¹ — organized or participated in *² — based on daily attendance.

	No.	Total Attendance	Av. Daily Att.
Sewing Clinics (3 days or more)	94	3184	11.6
Sewing Clinics (1 day only)	7	121	17.3
Clothing Construction Courses			
— Part A	62	756	12.2
— Part B	85	2231	8.7
— Part C	70	1969	9.4
Other Clothing Programs	12	285	23.7
Lectures and Demonstrations	213	4205	19.7
Consumer Information — Lectures & Demonstrations	80	1920	24
Individuals Assisted	3230		
Home Visits	223		

The second largest subject matter emphasis was in the consumer education area. There was an increase in individual assistance via phone calls, letters and interviews dealing primarily with problems in the care of clothing. The homemaker faces a difficult task in her clothing buymanship because of a great lack of labelling. Today's textile market is made up of more than the four fibers of twenty years ago. Textile chemistry knowledge has become increasingly important in interpreting to the homemaker 1) the special characteristics and care of the great number of new fibers and combinations of these fibers 2) new finishes and techniques in producing household fabrics. Compounding this problem is the fact that these are sold under a multi-number of trade names generally without fiber identification. All this made the business of advising homemakers more complex and necessitated updating programs in the consumer education field.

Crafts

	No.	Attendance
Lectures and demonstrations (included TV presentations)	71	1909
Individuals assisted	358	
Handicraft Exhibits (events judged at)	141	
Lectures on standards at exhibits	101	9337
Assistance with revision of prize lists (fair boards, women's groups, etc.)	64	
Home Visits	2	

This being centennial year, there was a demand for information on centennial ideas for most types of handicrafts. Some excellent rugs, quilts, wallhangings and paintings were created and received high awards at various exhibits. The need is still great for more emphatic teaching of the principles of good design to help create crafts of lasting value. Since the handicraft field enjoyed a new popularity, instruction on design has become increasingly important in our extension program.

The Home Economics Branch encouraged participation in good modern day craft using modern day equipment.

By request of organizations as well as Fair Boards, Home Economists were involved in the updating and revising of prize lists to encourage and improve exhibits.

Home Design

Lectures and Demonstrations:		Homes assisted with remodelling:	
Housing	67	Complete	60
Decorating	92	Partial	268
Attendance	4355	Community Groups assisted	35

Homes assisted with planning:		Buildings & finishing	
Complete	257	materials	379
Partial	158	Persons assisted by:	
Persons assisted:		Phone calls and	
House Plans	665	Office interviews	2542
Color	722	Homes visited re:	
Furnishings	492	Home planning, decorating,	
Storage	191	remodelling	1079
Utilities	76		

The demand for assistance with plans of new homes and storage areas has increased by approximately 12%. There has also been a marked increase for information on exterior and interior finishing materials with an emphasis on floor coverings.

A new approach to the home planning and remodelling schools was introduced. This approach is a workshop which involves a group of people who meet once a week for six consecutive weeks. The lectures follow the same format as the school, but people have a chance to absorb, study and work on their plans, exterior design construction techniques, utilities, and interior-exterior finishing materials for their own home. The first workshop conducted in Calgary was very successful. Specialists took part in 8 home planning & remodelling schools with total daily attendance of 109 persons, and 4 Home Design Schools with total daily attendance of 46.

Additional new programs introduced this year include: development of the prairie farm home, furniture refinishing and re-upholstering clinic, and storage ideas for the home.

With an increased awareness, partly developed through the food catering workshop on the subject of what constitutes good community kitchens, assistance with planning was an important aspect of our work.

"Preview '67" featuring new products for the home held in conjunction with Progressive Farming Days at the Vermilion Agricultural and Vocational College was very successful. Well over 2,000 people toured the four day show.

Considerable work has been expended by the Home Design Specialist and headquarters Home Economists in completing details of the floor plan, the design of built-in units, and the selection of furnishings, appliances and equipment for the Consolidated Laboratory.

The Home Design Specialists have been involved with the design of furnishings, furniture arrangements and general interior design of several district and headquarters Department of Agriculture office buildings.

4-H Girls' Club Work

Home Economists continued to organize and supervise 4-H Girls' Club work in their districts and to co-operate in multiple 4-H Club programs. They organized and conducted various functions such as achievement days, rallies, camps, judging and public speaking competitions. Several District Home Economists assisted with provincially organized 4-H functions and one Home Economist accompanied the winning teams to the Toronto Royal

Winter Fair. District Home Economists report that the centennial year activities for 4-H required a great deal more time to be spent in administration including exchange programs, visiting and outgoing delegations, recommendations for scholarships, references for 4-H members, etc. In the few areas where the District Youth Representatives were appointed, the District Home Economists assisted in their training, but have continued to be responsible for the Girls' Club work. A meeting was held with Youth Department staff at which specific procedures for carrying out the 4-H Girls' Club program was agreed upon and the duties of various staff members involved was clarified.

No. of 4-H Homemaking Clubs Supervised, Summer	58
Winter	193
No. of Lectures & Demonstrations at 4-H Gatherings	1,404
No. of 4-H functions attended	733
Total attendance	42,965
Junior Activities other than 4-H assisted	47
Attendance	6,768
Home visits re 4-H and other Junior work	434
No. of 4-H Councils	36
No. of 4-H Council Meetings	64
Attendance	1,595

Other Activities:

District Home Economists and specialists met an increased demand for co-operation from many other departments, organizations and agencies. Some of these were Departments of Health, Youth, Welfare, Cultural Activities, Indian Affairs, Women's Bureau, Centennial Committees, Chambers of Commerce, F.U.A., Regional Preventive Social Services, A.R.D.A., Junior Colleges, Provincial and Local Civil Defence, Agricultural Societies, Fair & Exhibition Associations, Service Boards, Health Units, Family Service Bureaus, Old Age Pensioners' Associations, Local Senior Citizens groups, Alberta Wheat Pool, Kiwanis, White Cross, Kinettes, Lionettes, Optimists, Y.W.C.A., Alberta Co-op Seed & Feed Fairs, Milk Producers, Alberta Potato Commission, Canada Research Stations, Electrical and Gas Companies, provincial and local organizations of W.I.'s, W.A.'s, F.W.U.A.'s, C.A.C., C.G.I.T., Scouts, Guides, radio and TV stations and university committees.

There were 263 meetings attended by 4,775 persons at which addresses were given or assistance and information provided at planning meetings.

The Department of Welfare was again provided with revised scales of allowances for food and clothing for use throughout the province. Various insurance companies and credit associations have used this information when counselling clients. Also 34 meetings on welfare were attended, 70 welfare families were counselled through home visits and office interviews, and 223 individuals were otherwise assisted at the request of welfare.

Fourteen District Home Economists worked jointly with the District Agriculturists in establishing or meeting with 19 County or Municipal Advisory Boards having 380 members, and attended 40 meetings.

In addition, 46 meetings were held with nine F.U. & C.D.A. groups and 12 Home Economics Advisory Committees.

Home Economists were primarily involved in: a) providing information to families and individuals to help them make wise decisions in spending their income b) designing and presenting home management programs based on the needs of groups and people in their area in the form of lectures, home management series, and farm and home and home accounting workshops.

A regional specialist in home management was appointed with headquarters in Calgary, serving the southern region of the province to meet the growing importance and need for education in family finance, consumer information, and all aspects of home management. The regional specialist in home management attended a workshop in "Education for Family Living" at Pepperdine College, Los Angeles. A "Family Life Education Series" was offered and presented in the southern region as a pilot project.

Food and Nutrition

	No.
Demonstrations and Talks	110
Workshops	63
Attendance	6879
Food Service Programs assisted	15
Persons otherwise assisted	5722

In addition 31 talks or demonstrations were given to 4-H clubs and 128 persons were personally visited to help them with their problems in food and nutrition.

The food and nutrition segment of our service has been firmly established. Demand for programs increased tremendously. Awareness of the need of good nutrition and better meal management has been created. People have demanded information in this field. Contacts have been made with other professional organizations, government agencies, service organizations and commercial companies and these people now contact us for information.

Several programs were initiated and have taken hold. The food catering workshop has been in great demand. Definite improvement has been noted since the programs started. Sanitation practises have improved. Community kitchens have been remodelled. Demand for a new program "Family Food Fare" indicated the need for unbiased nutrition information. Another new program, "Losing to Win", has been developed to meet the needs of the weight reducing clubs of the province.

Special effort was again directed to programs on cost of food. Topics such as "Can We Eat Well for Less" and "Sense with Dollars" were the result. More assistance this year was given individually through home visits, office interviews and phone calls.

Clothing and Sewing

Without a doubt, the emphasis is changing in this field. 1967 saw a 100% increase in demand for sewing instruction courses due mainly to the squeeze on family budgets, difficulty in locating on the market clothing suitable for mature women, and at the same time fulfilling the need for creative activity. Besides teaching basic sewing techniques and tailoring, stress was given the importance of fiber identification to determine fabric care.

INFORMATION BRANCH

General

Following further reorganization within the Extension and Colleges Division, the Radio and Information Section was given additional responsibilities and renamed the Information Branch.

The information program was broadened by the addition of two new staff members. Mrs. Linda Pickell was appointed April 17th as Products Promotion Officer, a position designed to plan programs for promoting Alberta grown products and to provide consumer information to the mass media from the Department's Home Economists. In September, Mr. Bill Ayano, was appointed as Artist to prepare visual materials and design bulletins and brochures for department members.

The department policy regarding the sponsorship of television programs was revised and a proposal to permit limited sponsorship was approved. The change enabled some of the smaller television stations in Alberta to provide more suitable time for local farm programs conducted by district extension staff. A set of aims, objectives and policies for a proposed departmental quarterly magazine were developed and approved by the Executive Committee. A plan for long term future involvement in television and film production was also prepared for the Executive Committee.

The Information Branch provided a consultative service in the field of public relations and mass communication to other members of the department and assisted with editorial and general publicity work. Assistance was provided to the Personnel Administration Office in the development of a recruitment brochure for agrologists. The ceremony to install four Albertans in the Agricultural Hall of Fame was planned and co-ordinated by the Head of the Information Branch.

EDITORIAL SECTION

Farm Notes

Approximately 250 agricultural and home economics articles were released in "Farm Notes". The number of articles released was down slightly from 1966 because of a number of longer articles that were required to cover more complex topics.

The material for "Farm Notes" was collected from Department specialists and released on a weekly basis to nearly 2,300 individuals representing radio and TV stations, newspapers, commercial companies, government institutions, and libraries in many parts of the world.

Pictures were included with some of the articles and proved popular with the farm press.

The mailing list for "Farm Notes" increased by almost 300 during the year, solely on the basis of written requests. Most of the requests were from commercial companies. The editors of weekly papers invariably say that they use a large amount of "Farm Notes" material and that this material is a valuable service to their rural readers.

Science And The Land

Fifty-two reports on agricultural research projects were released to the same people on the "Farm Notes" mailing list. The material for these reports was gathered during regular visits to the federal research stations at Lethbridge, Beaverlodge and Lacombe and to the Faculty of Agriculture, University of Alberta, Edmonton.

News Releases

There was a steady demand for news release services provided by the Information Branch in 1967. Approximately 80 special releases were edited and distributed to mass media. Glossy prints were also provided to publications when pictorial material was required. These releases were widely used by daily newspapers and the farm press.

Agricultural Weather Forecast

This was the seventh season that the Alberta Department of Agriculture co-operated with the Dominion Public Weather Office at the Edmonton International Airport in the preparation of the agricultural weather forecast.

The forecast was issued at 10:30 a.m. six days a week from May 8th to September 30th, when it was terminated for the season. A total of 135 forecasts were issued during this period. The agricultural weather forecaster also assisted the Public Weather Office prepare a report on the late spring snow storms in the Lethbridge area, and the effects of these storms on the agriculture in that area.

The forecast followed the same format used in the past. The synopsis discussed the past, present and expected weather conditions relating these to current farming operations in different parts of the province. This agricultural interpretation of the weather has been particularly useful during periods of imminent insect outbreaks and during the period of sensitive farming operations like spraying. The second section consisted of a regional forecast for the present, the following day and an outlook for the third day. The three agricultural forecast regions are the Peace, the Parkland and the Prairie.

Radio stations were asked for their comments and suggestions for improvement. Without exception, all replies commended the forecast and indicated that the radio stations appreciate this service for their farm listeners.

RADIO AND TV SECTION

Radio Production

During 1967 "Call of the Land" the Alberta Department of Agriculture's ten minute, Monday to Friday, farm broadcast was aired 260 times on ten stations:

CKUA Edmonton	CKRD Red Deer	CJOC Lethbridge
CFGP Grande Prairie	CKYL Peace River	CHAT Medicine Hat
CFCW Camrose	CKSA Lloydminster	CJDC Dawson Creek
	CJDV Drumheller	

"Call of the Land" was used primarily to publicize the services of the Extension and Colleges Division of the Alberta Department of Agriculture. Current information was also provided on federal and provincial farm policy and good farm management practices. Extensive use was made of personality interviews to provide closer association between research and extension personnel and the agricultural producers of the province.

The Bureau of Broadcast Measurements Survey provides an assessment of the program. Quarterly reports indicate that over 100,000 persons listened to the program once or more a week, on seven of the stations carrying the program. The three other stations do not participate in the B.B.M. survey.

Programming

Efforts were made to provide coverage of all segments of the agricultural industry. The majority of the material originated within the Alberta Department of Agriculture. The following table indicates the nature and frequency of the material used:

Personality interview	300
On-the-spot-reports	27
Miscellaneous Information	497
Editorials by Commentators and Guests	80
Musical — Christmas	1
Extension Information	39
	<u>944</u>

Sources of personality appearance are indicated in the following table:

Alberta Department of Agriculture	170
Other Alberta Government Departments	7
Canada Department of Agriculture	55
University of Alberta	26
Farm people, including 4-H	15
Other	27
	<u>300</u>

A total of 944 items were used on the 260 programs. The following table provides a breakdown of the material and the number of separate topics dealt with during the year.

Miscellaneous topics and information	114
General Agriculture, including world and national items	48
Livestock	290
Farm Safety	4
Farm Management and Economics	89
Field Crops, Soils and water	160
4-H	6
Poultry	9
Dairy	36
Veterinary Science	24
Horticulture	39
Agricultural Engineering	29
Agricultural Pest Control	27
Schools of Agriculture	25
Fur Farming	5
Home Economics and Extension	32
(consumer information)	
Apiculture	7
	<u>944</u>

The majority of the program was directed to the farm operator; however, many of the programs carried information for the

urban resident as well. Promotional time was provided for events sponsored by the Alberta Department of Agriculture and other agricultural organizations. Extension courses in agriculture were widely publicized.

A cross section of events provided with on-the-spot coverage included: Western Stock Growers, Western Hog Growers, Dairy-men's Association annual conventions, Breed Association meetings, Exhibition Board meetings, Alberta Federation of Agriculture, Progressive Farming Days, Calgary and Edmonton Bull Sales, Edmonton Farm and Ranch Show, Canada Department of Agriculture Research Stations, Beaverlodge, Lacombe and Lethbridge, Feeder's Day, University of Alberta, Alberta Safety Council, Canadian Free Trade Association, Agricultural and Vocational Colleges, Fairview, Vermilion, and Olds, Alberta Wheat Pool, Alberta farms and ranches, and Farmers Union of Alberta annual convention.

For the tenth consecutive year, interviews and reports from the Toronto Royal Agricultural Winter Fair were released directly through the Alberta Government telephones network to the ten participating stations. In addition, night press reports were provided for private stations and daily newspapers.

"Call of the Land" was produced, recorded and distributed from the studios of the Information Branch. A total of 4,589 "Call of the Land" broadcasts had been released as of December 31, 1967.

Television

The Alberta Department of Agriculture co-operated with the other prairie provinces, the three universities and the C.B.C. to produce the television short course "This Business of Farming" for viewing in January, 1968. The theme of the four day series was "More From the Land". Eleven Alberta agrologists and seven farmers participated in various sections of the series which included: "Factors in Crop Production" and "Paying Practices". Four local follow-up programs were arranged by regional extension personnel. The Information Branch was responsible for the television short course summary bulletin which was distributed throughout the prairie provinces.

In co-operation with the Film and Photographic Branch of the Department of Industry and Development, the Information Branch provided the province's eight television stations with 1,400 feet of film coverage on Alberta's achievements at the Royal Agricultural Winter Fair. Television news clips were also produced on such subjects as "Rabies in Alberta", "The Alberta Farm Guide", "Progressive Farming Days", "Beef Cattle Futures Market", "Aerial Application of Fertilizer and Seed", "Sweet Corn Harvest", and "The Agricultural Hall of Fame". Film footage slide material was made available to extension personnel and commercial programs for television use.

Evaluation—Radio and Television

The Alberta Department of Agriculture undertook an extensive research project, under the direction of Warren Wismer,

Head of the Information Branch, on the use of mass farm media by Alberta farmers. The results of the project are based on 504 completed interviews by district extension staff from a random sample of 601 farmers. The survey also related characteristics like age, education, gross farm income and innovativeness to farmers' media use.

A detailed report on the "This Business of Farming" television short course was filed with the department.

The survey found that two-thirds of all Alberta farm managers listen to some farm radio program at least once or twice per week and that 21% of all Alberta farm managers listen to "Call of the Land". This is considered a good following by broadcasters since, for example, on any one day there are never more than 25% of the potential households (urban and rural) actually tuned in during the noon hour.

The Alberta Department of Agriculture has always purchased the radio time for "Call of the Land" in order to maintain it as a noon time program. The high percentage of farmers who listen to the program substantiates this reasoning. Considering all the costs of producing and presenting the program, the weekly cost for each farmer who listens once or more per week is calculated at a little over six cents. A great many non-farmers also listen to "Call of the Land." When they are considered, the cost of the program is a little more than one cent per household reached per week.

The following table illustrates the breakdown of farm listeners by Extension Region:

Peace River	64.6%	East Central	9.0%
Northwest	8.1%	Calgary	1.7%
Northeast	15.9%	South	25.0%
West Central	29.0%		

Some of the variation was due to the availability of the program and part of it probably is due to the characteristics of farmers and farming in those regions.

The same survey was used to measure the viewing and usefulness of the television series "This Business of Farming". Television is available to most of the farmers in Alberta; 86.7% of the farmers in the sample had television sets. Of these, 38.7% saw some of the series and about three out of five farmers rated the series as quite useful or very useful. What favors an instructional television series like this is that over 60% of the people who saw at least some of it had not attended an extension meeting and about half had not contacted their extension agent. Television is considerably more expensive to use than radio. It cost about fifty cents for every farmer who watched some of the "This Business of Farming" series.

Product Promotion

The Product Promotion office was established to promote Alberta grown farm products and to provide consumer information from department Home Economists to the mass media. The Product Promotion Officer assisted with national and provincial

promotions such as Salad Month and worked closely with commodity groups in their promotion programs.

Provincially, the Products Promotion Officer assisted corn growers with publicity and promotion of fresh sweet corn, assisted the Supervisor of Apiculture with a survey to examine the potential for increasing honey sales in restaurants, worked on lamb promotion and maintained a liaison with the Alberta Poultry Marketing Board. Quantity meat sales techniques were investigated and reported. A single newspaper article on that subject resulted in over 500 requests for a publication on buying and preparing beef. Some potato testing and revising of a potato booklet were done for the Alberta Potato Commission as well as assisting with their advertising program.

Radio, television and newspapers were used extensively for promotional work. Ten radio stations used the 127 daily one minute promotional spots that were prepared for them. In addition, 25 special Christmas programs were prepared for one station, six guest appearances were made on other stations, and five television programs were presented.

The breakdown of material for the print media was as follows: seven press releases pertaining to new products, one magazine article on potatoes, an article for the Dairy Food Service of Canada and newsletters to District Home Economists.

The Products Promotion Officer also gave two radio and TV training sessions to new home economists on staff.

Agricultural Display

In co-operation with Industry and Development Department, agricultural displays were placed at The World Congress of Farm Writers, Montreal, The Agricultural Institute of Canada, Montreal and Northgate Shoppers Mall, Edmonton.

AGRICULTURAL ENGINEERING BRANCH

The demand for agricultural engineering information and service increased during the past year. Numerically the number of farm calls was similar to the previous year; however, the Agricultural Engineering Branch did not have any summer engineering assistants during 1967, as it had in the past. There was a trend for more specific information and plans to meet individual needs particularly for operators engaged in the beef and hog enterprises, thus the reason for a threefold increase in the number of plans prepared by the Extension agricultural engineers. Likewise, there was an increase in the number of tours conducted by the agricultural engineering staff. It was interesting to note that there was an ever increasing demand for farm calls specifically requesting information on buildings, which accounted for 60% of the calls made. Approximately another 30% of the calls were requests on farmstead mechanization, water systems and waste disposal. In other words, most of the agricultural engineering farm calls were associated with the housing or mechanization of livestock production.

The number of schools, short courses, field days and demonstrations remained approximately the same as last year. There was however, an increase in demand for rural welding clinics and eighteen of these one-week courses were conducted in 1967. In addition, a new type of welding clinic was operated as a pilot project at Lacombe in co-operation with the local school board. The local vocational high school facilities were used and two evening classes were conducted each week during the winter months to give approximately the same number of hours of instruction as the one week courses.

The extension engineers of the Agricultural Engineering Branch were involved in planning a number of new types of practical farming enterprises such as the total confined dairy housing set ups, bulk fertilizer storage tests, controlled environment for livestock and vegetable storage, new seed cleaning plant designs, and modifications.

The Agricultural Engineering Branch was host for tours for engineering personnel from Australia, Ireland, England, California and Russia.

The staff of the branch served on national, provincial and local committees throughout the year and acted as consultants to a number of divisions and departments within the government services.

The major policy change involved the take over of all individual farm drainage surveys by the Water Resources Division. These surveys and designs of individual drainage systems were formerly carried out by the Extension Agricultural Engineers.

The following tables summarize the major agricultural engineering activities:

<u>Schools</u>	<u>No.</u>	<u>Attendance</u>
Farm Building (General)	8	285
Home Building and Remodelling	8	194
Swine Building	7	242
Home Building & Remodelling Workshop	1	18
Sewerage and Plumbing	3	65
Electrification	3	60
Machinery	6	214
Tractor Maintenance	9	168
Rural Welding Clinic	20	384
Water and Water Well Development	11	434
Beef Production	6	261
Swine Production	6	255
Dairy Production	1	8
Farmstead Mechanization	4	107
Others	7	198
Demonstrations and Field Days		
Forage	5	187
Farmstead Mechanization	2	107
Machinery	7	300
Harvesting	2	15
Building Tours	23	691
Others	1	10
General		
Short Courses	3	115
Meetings (a) Group meetings with farmers	54	572
(b) Professional, Seminars, etc.	119	
Farm Notes	13	

TV Programs	11	
Radio Programs	12	
Progressive Farming Days	1	2,017
Plan Production (a) For General Distribution	3	
(b) Individual	164	
Bulletins and Pamphlets prepared	4	
Farm Calls (a) Building	709	
(b) Farmstead Mechanization & Materials Handling	198	
(c) Water and Sewerage	221	
(d) Machinery	34	
(e) Others	55	
Surveys (a) Drainage	30	
(b) Irrigation	1	
(c) Others	26	
Calls to D.A. Offices	462	

RURAL LEADERSHIP TRAINING SECTION

For several years the Extension Division of the Department of Agriculture and the Extension Department, University of Alberta, have been involved with leadership development among rural people. The increasing need and emphasis on competent leadership for rural organizations and groups required more adequate resources to train leaders. Recognizing these demands and the continuing role that each have to play, a Leadership Training Section was established with the Extension and Colleges Division, Department of Agriculture. A similar function was undertaken by Extension Department, University of Alberta. The objective was to provide a co-ordinated and more adequate Leadership Training approach for Rural and Community Development in the Province of Alberta.

The section functions have been divided into six basic areas:

- (1) **Definition of Role:** Performed a teaching role in the areas of leadership training, communication, human relations, program planning, rural sociology and staff training.
- (2) **Consulting Role:** Served as advisors in leadership development, human relations, program planning and staff training to divisional and departmental staff and service. A considerable portion of the function of the section was in consultation with other agencies.
- (3) **Co-ordinating Role:** Provided leadership in co-ordinating programs in leadership training within the division and the department between other government agencies, including the university and voluntary groups.
- (4) **Initiating Role:** Provided leadership and direction in designing curriculum for short courses and seminars in area of specialty.
- (5) **Administration & Planning Role:** Administrative responsibilities were assumed relating to assigned responsibilities.

Summary of Branch Activities:

The activities were well distributed amongst the five major areas of responsibility. An approximate breakdown of the time spent in each area would be as follows:

Resourcing	15%
Consulting	35%
Co-ordinating	15%
Initiating	10%
Administration & planning	25%

The approximate distribution of time indicates that 50% of the staff time was taken up in teaching and consulting, while 25% was spent co-ordinating with other agencies and initiating projects, ideas, etc. Approximately 25% of the time was spent carrying out preparation for the action roles and administering office details.

ALBERTA FEDERAL PROVINCIAL MANPOWER COMMITTEE

Again this year, the major effort of the committee was concerned with the supply of labor for the sugar beet, vegetable and potato industries in southern Alberta. Labor supplies were acute during the peak season, but a very late spring and an unusually favorable growing season enabled the available labor to handle the reduced acreage of sugar beets. The available labor gave varying degrees of satisfaction in the vegetable and potato producing and processing industries.

As in other districts, a major complaint was the lack of skilled workers for general and specialized farming operation in the irrigation areas.

An experienced Agricultural Manpower Supervisor was employed to supervise the committee's responsibilities in the irrigation and specialized crop areas. He worked closely with Mr. James Lynn, Manager of the Lethbridge Manpower Office. One full-time fieldman and two part-time fieldmen were employed to assist in the Lethbridge area. Excellent co-operation was received by the supervisor and the work of the committee was highly successful.

The larger percentage of the workers recruited, transported and placed by the committee was Indian or Metis.

The following are the number of workers registered and placed by the committee. This included assistance in recruitment, transportation costs, meals and lodging until placed on farms and relocation after finishing contracts:

Province	Adults	Children	Total
Saskatchewan	1,041	152	1,193
Alberta	301	39	340
British Columbia	4		4
TOTALS	1,346	191	1,537

Housing:

Special efforts were made by the committee to improve the housing for transient workers in the specialized crop production areas. Encouragement and support was given to groups to organize, develop, and construct hostels in major centres for workers. Two small hostels are now operating successfully — one at Iron Springs, and one at Welling. Financial aid amounting to \$6,678.25 was given as a grant to the Battersea Hostel Association, this being 40% of the cost of construction up to October 1st, 1967.

Other grower organizations besides the Battersea group are being urged to organize and develop hostels for 1968.

Arrangements were completed to allow a limited number of American sugar beet laborers to come into Alberta for a four to six week period during the peak labor season. We were unsuccessful in actually bringing any of these workers into Alberta in 1967, but negotiations will be continued in 1968.

Immigrant Families for Agricultural Labor:

Most authorities and farmers believe that some immigrant families with desirable qualifications as agricultural workers and citizens could be the most permanent and satisfactory solution to the labor problem. The committee is continuing its efforts in this regard.

General Farm Labor:

Guidelines have been developed for labor contracts for general agricultural labor and their employers. These were circulated for discussion and acceptance by those most concerned.

Recruitment and placement of general farm workers is the recognized responsibility of the Canada Manpower Department. District Agriculturists assist where needed, but in nearly all cases requests for labor were referred to the local Manpower offices. Excellent co-operation was received in 1967 from these offices.

AGRICULTURAL SOCIETIES

The following agricultural societies held classified fairs during 1967:

"A" Class — Calgary, Edmonton, Lethbridge, Red Deer.

"B" Class — Camrose, Grande Prairie, Lloydminster, Medicine Hat, Olds, Vegreville, Vermilion.

"C" Class — Athabasca, Battle River, Benalto, Darwell, Donnelly-Falher-Girouxville, Lougheed, Mayerthorpe, Peace River, Pincher Creek, Priddis-Millarville, Vauxhall, Westlock, Wildwood, Willingdon.

Other Societies — (Some operating unclassified fairs).

Alix, Barrhead, Cardston, Central Alberta (Lacombe), Drumheller, East Central Alberta (Coronation), Fairview, Hanna, High Prairie, High River, Lamont, Nanton, Okotoks, Rimbey, Rocky Mountain House, Spirit River, Stettler, St. Paul, Taber, Valleyview, Victoria Trail (Smoky Lake), Willow Creek (Claresholm).

Valleyview organized a new society in 1967, and received it's charter dated December 11, 1967.

The annual meeting of the Alberta Agricultural Societies Association was held in Edmonton, December 14, 1967, in the Agriculture Building. Chick Miller, the President, was ill and unable to attend. Mr. Alex Pacholok, Athabasca, then Vice President, conducted the meeting. Speakers included Dr. E. E. Ballantyne, Deputy Minister of Agriculture, Fred Miller, Agricultural Superintendent, Edmonton Exhibition Association, Vince Macdonald, Livestock Branch, Canada Department of Agriculture, Mrs. Marion Atkinson, Associate Head, Alberta Home Economics

Branch, and S. S. Graham, Director of Extension and Colleges Division.

A social evening was held at the Royal Glenora Club, the evening before the annual meeting.

An amendment to the Agricultural Societies Act provided for guarantees by the Alberta Government for loans negotiated through banks or other lending institutions. Conditions governing the loans included:

- (1) detailed short and long term plans for development of the grounds and buildings,
- (2) approval by city or town authorities, including planning boards,
- (3) guaranteed security of tenure of the grounds for at least 25 years,
- (4) development of grounds or buildings must have multiple use for the citizens of the community including fairs, sports and recreational activities.

No loans were finalized for 1967 which required a guarantee by the Alberta Government. Several were being considered.

Other events organized or sponsored by agricultural societies included community fairs, bench shows, horticulture shows, livestock shows and sales, seed fairs, agricultural short courses, demonstrations and support of 4-H Clubs.

MASTER FARM FAMILY PROGRAM

Eleven families were nominated for the 1967 Master Farm Family award. Two families receiving the award were:

The Walter V. Boras family, Picture Butte.

The Don E. Purser family, Paradise Valley.

This year the Walter V. Boras family accepted an all expense trip and tour to Expo '67 and agricultural points of interest in Quebec and Ontario. Excellent co-operation was received from the Extension Services in Quebec and Ontario as well as other public officials at Expo and at places visited.

Alberta Master Farm Family Association:

An attempt was made to organize a charter flight to Expo '67 by members of the association. Although a number of families planned to attend, they could not agree on the best time and method of travel. Plans had to be cancelled.

NAMES OF HOMES ACT

Number of homes registered in 1967	67
Total registration for the province	716

ALBERTA IRRIGATION PLANNING BOARD

The work of this board has been taken over by "The Irrigation Council". The board will be officially disorganized early in 1968.

PUBLICATIONS AND VISUAL AIDS SECTION

With the improvement of physical facilities at our new office in the Agriculture Building, and added clerical help, it has been possible to improve and increase our services to the Head Office and Field Personnel.

General Agricultural publications distributed (increase of 32% over 1966)	364,404
Homemaking publications distributed	34,836
Individual building plans (increase of 39% over 1966)	29,001

Visual Aids:

The acquisition of additional projectors, loud hailers and screens made it easier to fill more orders from our personnel during the year. 167 more bookings were handled during 1967 as compared to 1966.

Visual Aid Equipment Available for Distribution to Department Personnel

	No. on hand	Orders filled
Overhead projectors	7	66
Filmstrip & Slide projectors	22	131
Opaque projectors	1	10
Movie projectors	9	145
Loud Hailers	3	22
P.A. Systems	6	44
Screens	17	168
Films owned or on loan in library		160
Requests for films (supplied)	156	273

Changing our Xerox 914 for a 2400 enabled us to double our output on the duplicating machine with greater expediency and higher quality. 154,865 copies were made in 1967. At the present rate of increase it is expected that over 250,000 copies will be reproduced in 1968.

1,206,915 copies were mimeographed on our Gestetners during the year for the divisions of the department. A large number of these had to be collated and stapled.

Publications:

We have endeavored to standardize the cataloguing and indexing of our agricultural publications. Some progress has been made in this regard. 44 new publications were printed for distribution during the year. Major new publications included the "Alberta Farm Guide" and Alberta Agriculture "A Historical Review".

1967 REPORT OF THE AGRICULTURAL AND VOCATIONAL COLLEGES BRANCH

S. S. GRAHAM, B.Sc., P.Ag., Director, Extension and Colleges Division

J. E. HAWKER, B.Sc., B.A., P.Ag., Director

W. J. COLLIN, B.Sc., B.Ed., P.Ag., Co-ordinator of Agricultural Education

J. E. BIRDSALL, M.Sc., P.Ag., Principal, Olds College

W. S. BARANYK, B.Sc., B.Ed., P.Ag., Principal, Vermilion College

J. A. R. PALIN, B.Sc., B.Ed., P.Ag., Principal, Fairview College

1967 was a very active year at all three colleges. New facilities were completed or under construction at year's end as replacement of buildings twenty-five to fifty years old continued according to plan or more accommodation was provided to allow for increased enrolment. A number of centennial projects highlighted the year's program.

Graduation 1967

For the 1966-67 term, students were graduated from the Olds College on June 29th, from Vermilion on June 30th and from Fairview on June 23rd, 1967. On these dates diplomas of graduation or certificates, shown in brackets, were presented as follows:

	Olds	Vermilion	Fairview	Total
Agriculture	44(0)	37(0)	28(0)	109(0)
A.I. Technician	N/O ²	14(14)	N/O	14(14)
Business Education	13(12)	32(25)	19(12)	64(49)
Fashion & Design	12(0)	N/O	N/O	12(0)
Home Economics	N/O	7(0)	N/O	7(0)
Horticulture	11 ¹ (0)	N/O	N/O	11(0)
TOTAL	80(12)	90(39)	47(12)	217(63)

¹Diplomas granted after completion of summer assignments.

²Not offered.

The total of 217 graduates is 26 below the total of 243 graduated in 1966. At Olds and Vermilion some restriction on enrolment was experienced due to campus dislocation as a result of very extensive construction.

Staff Conference

On August 31st and September 1st, 1967, a staff conference involving instructional and administrative personnel from the three colleges was held in Edmonton.

The main purpose of the conference was to have representatives from each college meet their counterparts from the other colleges to discuss matters of mutual concern with a view to recommending changes to the administration. The 1967 conference was highly successful and was highlighted by presentations from Mr. E. H. Lange, Director of the School of Agriculture at the University of Manitoba, Mr. F. Bischoff, Principal, Cartier-McGee Junior High School, Edmonton, and Mr. R. Hodgson, staff member from the Northern Alberta Institute of Technology.

As an adjunct to but separate from the staff conference, subject matter staff committees met in Edmonton May 12th, 1967

and formulated recommendations dealing with specific subject material.

Staff Changes

In 1967 there were 25 staff changes. Of these, 15 left to take other employment or were transferred to other responsibilities within the government service; three were temporary and seven were added to handle new courses.

New Courses

In the Agricultural Diploma Course (Technology), soil science major and agri-business major were added at all three colleges. Students majoring in soil science can qualify to enter the land assessment or the soil technician fields. The agri-business major provides a good balance between agricultural and business education.

A certificate six months course in agriculture was made available at all three colleges in the fall of 1967.

A certificate course of ten months in home economics was offered at Vermilion only. While open to all applicants, it was set up at the specific request of the Department of Indian Affairs.

A hog production course comprising two months of study at the college and three months on an approved hog farm, was made available at the Vermilion College only. The course was designed to produce practical hog production men.

Board of Agricultural Education

During 1967 the board met first on June 14th. The board approved inclusion of a soils science major and agri-business major at all three colleges and a hog production course at Vermilion.

Home economics programs at Vermilion are to be reorganized when the new teaching facilities for this area of work are completed.

High School Conferences held at all three colleges were commented on by the Principals. The board gave unanimous approval of such conferences and encouraged their continuation.

The second meeting of the board was held on October 31st. The chairman indicated that an amendment to the Agricultural and Vocational Colleges Act was being prepared to allow for the granting of certificates or other suitable documents as well as diplomas.

An interim report on the naming of major college buildings was presented by the Director and referred for specific recommendations.

The Director reported progress in the matter of possible accreditation of Agricultural College subjects at the University of Alberta in the Faculty of Agriculture.

Any adjustment in board and room rates at college residences was left to the judgement of the Director and the Principals in consultation with the Minister.

The board favored participation by the colleges in the newly developed "Career Fairs" established through the Department of Education.

Single page brochures announcing courses offered at the colleges were heartily endorsed by the board.

Board members urged a continuation of the practice of holding a spring and fall meeting each year.

The 1967-68 Term

Construction activity continued at each college on an increased scale as detailed later in this report. Student enrolment was down by 26 students. Crop conditions in the Peace River area adversely affected registration at Fairview.

Three new courses were offered in 1967 majors in agribusiness and soil science within the agricultural technology course at all three colleges. A hog production course of one month at the college, three months on an approved hog farm and a final month at the college was introduced at Vermilion.

Student Assistance Act Loans, Grants and Prizes

Assistance made available to students in the 1966-67 college year was as follows: (to June 30th, 1967).

	Olds	Vermilion	Fairview	Total	
Loans	\$15,645.00(37) ¹	\$17,593.00(35)	\$18,927.00(42)	\$52,165.00(114)	
Loan Remissions	3,185.05(25) ¹	3,546.25(24)	3,511.40(27)	10,242.70(76)	
Prizes (\$50.00 each)	800.00(16) ¹	350.00(7)	350.00(7)	1,500.00(30)	
Total	19,630.05	21,489.25	22,788.40	63,907.70	
Number of Students Assisted		51(51) ²	40(28)	46(41)	137(120)

¹Number of students.

²1965-66.

Maintenance

Effective April 1st, 1967, major maintenance at all three colleges was transferred from the Department of Agriculture to the Department of Public Works. Caretaking responsibilities were retained by the Department of Agriculture.

Construction

Olds:

1. **Student Residence** — started in November 1966 and virtually completed December 1967. To occupy late February, 1968.
2. **Heating Plants** — constructed.
3. **Maintenance Shop** — construction started October, 1967.
4. **Hog Studies Building** — completed in 1967. Some interior work to be done.
5. **Services Distribution System** — completed.
6. **Cattle Sheds and Feeders** — three of each constructed.
7. **Staff Residences** — two completed.

Vermilion:

1. **Central Heating Plant** — constructed.
2. **Animal Science Building** (Phase II) — completed.
3. **New College Building** (Phase I) — completed. Regional offices are temporarily located on the second floor.
4. **Services Distribution System** — completed.
5. **Four Staff Residences** — completed.

Fairview:

1. **Farm Structures & Farm Machinery Laboratory** — completed.
2. **Girls' Residence** — virtually completed. To be occupied in March, 1968.
3. **Plant Science Building** (Phase I) — outer construction virtually completed.
4. **Animal Science Laboratory** (Phase I) — construction started.
5. **Central Heating Plant** — completed.
6. **Maintenance Building** — commenced.
7. **Services Distribution System** — completed.

Enrolment for 1967 Term (see page 99)

Programs Beyond the College Year

Canada's centennial year was marked appropriately at each college by special functions and activities.

Among special programs at Olds were a Rural Fire Protection Conference, Women's Institute Conference, F.U.A. District Meetings, Harvester Service School, High School Guidance Counsellors' Conference, A.W.I. Girls' Club Achievement Day and Convention, Dairy Field Day, Alberta Farm Women's Week, 4-H Club Weeks, Provincial Eliminations and 50th Anniversary Celebration, Horticultural Week, District Home Economists Short Courses, Dairymen's Nutrition Course and Farm Welding Adult Courses. Person-days involved totaled 7,675 plus an estimated 1000 individual visits to the college.

Vermilion recorded 1082 individual visits in addition to formal functions including Farm Business Analysis Meetings, F.U. and C.D.A. Conference, A.I.A. Meetings, Alberta Wheat Pool Session, Thailand Teachers' Visit, North-Central Grazing Association, 4-H Leaders' Conference, F.U.A. Meeting, Vermilion Alumni Reunions, 4-H Dairy Club and Council Meetings, Scout and Girl Guide District Leaders' Meeting, 4-H Public Speaking Competitions, Agricultural Society Meeting, Horticultural Short Course, Women's Institute Convention, Fire Officers' Training Schools, Official Opening of Fire Tower, High School Counsellors' Conference, Danish Farmers' Exchange, Business Education Adult Classes, A.I. Refresher Course, I.O.D.E. International Meeting, Alberta Hail Board, Vermilion Light Horse Club, and an Audio-Visual Short Course. These functions involved 3,561 person-days.

At Fairview, special functions at the college included 119 events involving 3,610 person-days.

Appreciation

In 1967, the colleges received very considerable support from many commercial companies, farm and other organizations, and a large number of individuals. The Department of Agriculture expresses its sincere appreciation to all of these people.

A number of other departments of the Provincial Government, the University of Alberta and the Federal Government have been most helpful. Their assistance is gratefully acknowledged.

The excellent co-operation of college principals and their staffs has been very much appreciated.

OLDS AGRICULTURAL AND VOCATIONAL COLLEGE

Highlights of 1967 were the official opening of the Lachlin McKinnon Building for Animal Science, rapid progress on the students' residence, and the beginning of the use of the term "Technology" in naming courses. These changes improved the public image of the college and resulted in a more competent student group being registered in the fall session. Another significant development was the entering into a contract for food service with Versafood Services Ltd. on November 10th, 1967.

Enrolment

Enrolment for the year was as follows:

	Winter	Spring	Fall
Agriculture			
First Session	42	3	50
Second Session	61	4	10
Third Session	20	6	28
Fourth Session	25	3	6
Post Grad.			2
Horticulture			
First Year	12		19
Second Year	11		10
Irrigation Technology			
First Year	14		8
Second Year			14
Fashion and Design			
Commercial	19	20	22
High School Academics	22	23	16
Appraisal & Assessment		19	
Total Person-days —	34,070		

Visitors' Day and Official Opening of Lachlin McKinnon Building (Animal Science)

The Annual Visitors' Day was held on Saturday, March 11, 1967. A highlight of the day was the official opening of the new Animal Science Building which was named the "Lachlin McKinnon Building" in honor of a pioneer farmer and rancher of Calgary whose family has made a great contribution to the college in various ways. All phases of the program of the day were well attended. Total attendance was about 400.

Graduation and Home Coming

For the third consecutive year, graduation and home coming were combined. These events were held on Thursday, June 29,

1967, with His Honor J. W. Grant MacEwan, Lieutenant Governor, as speaker. The classes of 1917, 1927, 1942 and 1957 were specially honored on their respective anniversaries. About 900 people attended. Mr. J. E. Hawker represented the Department of Agriculture, Mr. F. Stevenett, the Alumni Association and Mr. E. W. Phillips, the class of 1917. Class valedictorian was Mr. Gary Anderson of Bowden.

Prizes for proficiency in various fields were awarded to ten students. Diplomas and certificates were awarded as follows:

	Diplomas	Certificates	Total
Agricultural Technology	44		44
*Horticultural Technology	11		11
**Business Education	1	12	13
Fashion & Design Technology	12		12
TOTAL	68	12	80

*Eleven students participated in graduation and received diplomas in Horticulture after completing summer assignments.

**All Business Education students received certificates. One who excelled in all subjects received a diploma.

High School Academics

Grade XII subjects offered in 1967 included English 30 and 33, Social Studies 30, Mathematics 30, Chemistry 30 and Biology 30.

Registrations were as follows:

	Winter	Spring	Fall
English 30	3	5	
English 33	2		
Social Studies 30		10	5
Mathematics 30	15	8	5
Chemistry 30		8	11
Physics 30	13		
Biology 30		5	7

At the end of the year 30 students had enrolled for the winter session starting in January, 1968.

Extension Activities

College staff continued to participate in extension activities at the college and in many other parts of the province. The facilities of the college were used by extension workers and others with and without college staff being involved.

At the end of the year plans were being formulated to expand the "Continuing Education" aspects of the college program.

Centennial Programs

The Canadian centennial year was recognized at the college in a number of ways. A large centennial symbol made up of many lights marked the entrance to the student residence throughout the year. A large centennial planting set off the front lawn; the graduation and home coming carried out the centennial theme and His Honor J. W. Grant MacEwan, Lieutenant Governor of Alberta gave the centennial graduation address; the theme was

also carried through Visitors' Day, student programs and summer programs and the college participated with the Town of Olds in planning and building a float which toured fairs and other events.

Publicity and Public Relations

In an effort to make the public more aware of the present status and level of education at the college, publicity and public relations were given greater emphasis during 1967.

The expanded program included regular press releases with and without photos, feature articles, advertising, radio and television programs, a short film, conducted tours of the campus, seminars for high school counsellors, talks to Home and School Associations and at career events and the distribution of a greater variety of printed material.

4-H Events

The college continued a close association with the 4-H Organization. About 40 percent of the students had a 4-H background. At 4-H Campus Club operated throughout the winter and spring sessions. Two 4-H club weeks and provincial eliminations were held at the college; two students assisted with judging at the Provincial Junior Seed Fair in Calgary and numerous local and district 4-H functions were held at the college.

A special feature during provincial eliminations was the golden jubilee celebration of 4-H. This marked 50 years since Mr. W. J. Elliott, Principal of the college, started a swine club in the Olds district. This is believed to have been the start of junior farm clubs in Alberta. A cairn with plaque commemorating the event was unveiled on the college campus.

SUMMARY OF 1967 EVENTS AT O.A.V.C.

Month	Event	Person-Days
February	Olds Rural Fire Protection Ass'n	60
	Visitors Day & Official Opening — Animal Science Building	400
March	Home Economics Short Course	140
April	Olds East Constituency Women's Inst.	75
	F.U.A. District #10 Meeting	15
	International Harvester Service School	30
	Guidance Counsellors Conference	90
	A.W.I. Girls Clubs Achievement Day	75
	Horticulture Short Course	60
May	I.H.C. Dealer Training Course	26
	E.I.D. Insemination	25
June	Dairy Field Day & 4-H Judging Comp.	70
	F.U.A. District #10 — Annual Convention	81
	Graduation and Home Coming	900
July	A.W.I. Girls Club 48th Convention	875
	Alberta Women's Week (plus daily visitors)	500
	4-H Club Week (16th-21st)	1050
	4-H Club Week (23rd-28th)	990
August	4-H Eliminations	678
	4-H 50th Anniversary	300
	Foremost 4-H Group	70
September	Horticultural Week	500
October	F.U.A. Annual Banquet	250
	District Home Economist — Refurnishing Course	75

ENROLLMENT AT EACH COLLEGE FOR THE WINTER, SPRING AND FALL SESSIONS, 1967

COURSE	OLDS			VERMILION			FAIRVIEW			TOTAL		
	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Spring	Fall	
AGRIC. (DIP.)	148(187) ¹	16(42)	97(103)	111(120)	15(15)	44(81)	61(68)	N/O(N/O)	43(68)	320(375)	31(57)	184(252)
AGRIC. (CERT.)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	9(N/O)	N/O(N/O)	N/O(N/O)	13(N/O)	N/O(N/O)	N/O(N/O)	22(N/O)
APP. & ASS'T	N/O(N/O)	19(18)	N/O(N/O)	N/O(N/O)	11(10)	N/O(N/O)	N/O(N/O)	5(6)	N/O(N/O)	N/O(N/O)	35(34)	N/O(N/O)
ARTIF. INSEM'N	N/O(N/O)	N/O(N/O)	N/O(N/O)	14(6)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	14(6)	N/O(N/O)	N/O(N/O)
BUSINESS ED'N	18(35)	20(35)	23(18)	32(32)	32(30)	15(36)	26(22)	12(17)	19(26)	76(89)	64(82)	57(80)
FASHION & DESIGN	15(21)	15(21)	21(19)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	15(21)	15(21)	21(19)
HOG PRODUCTION	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	17(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	17(N/O)
HOME EC. (DIP.)	N/O(N/O)	N/O(N/O)	N/O(N/O)	8(9)	8(7)	7(9)	N/O	N/O	N/O(N/O)	8(9)	8(7)	7(9)
HOME EC. (CERT.)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	11(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	11(N/O)
HORTICULTURE	23(24)	N/O(12)	29(23)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	23(24)	N/O(12)	29(23)
IRRIGATION	14(N/O)	N/O(N/O)	23(15)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	14(N/O)	N/O(N/O)	23(15)
MOTOR MECHANICS	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	5(13)	12(12)	14(11)	5(13)	12(12)	14(11)
WELDING	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	N/O(N/O)	12(11)	9(N/O)	18(9)	12(11)	9(N/O)	18(9)
TOTAL VOCATIONAL	218(267)	70(128)	193(178)	165(167)	66(62)	103(126)	104(114)	38(35)	107(114)	487(548)	174(225)	403(418)
H.S. ACADEMICS ³	22(15)	23(8)	16(13)	17(27)	12(9)	18(15)	24(28)	23(33)	30(31)	63(70)	58(50)	64(59)
TOTAL	240(282)	93(136)	209(191)	182(194)	78(71)	121(141)	128(142)	61(68)	137(145)	550(618)	232(275)	467(477)

1. 1966

2. Not Offered

3. Students with 50% or less academic program are listed as vocational students.

November	Alumni Dance	400
	Nutrition Course for Dairymen	36
	Farm Welding Course (Adult)	24
December	Farm Welding Course (Adult)	36
	Nutrition Course for Dairymen	12
	Miscellaneous Meetings (Olds Seed Plant, F.U.A., Home Economist, District Agriculturist, etc.)	108

7675

The foregoing does not include the many individuals and groups who come to visit or for information throughout the year. A conservative estimate of these would be about 100.

Instructional and Administrative Staff

The instructional and administrative staff at the end of the year was as follows:

J. E. Birdsall, M.Sc., P.Ag.	— Principal
J. Adams, B.Sc.	— Farm Structures
W. F. Arthur, B.Sc.	— Human Relations & Rural Sociology
H. Barber, B.Ed.	— Academics (Math., Science)
S. Bernstein, B.S.L.A.	— Horticulture
K. C. Bette, M.Sc.	— Soils - Irrigation
E. O. Bryant	— Maintenance Supervisor
W. M. Burton, B.S.A., P.Ag.	— Farm Mechanics
(Mrs.) K. M. Chesney	— Secretary
D. F. Chiliak	— Assistant Dean of Men
(Mrs.) E. M. Duncan	— Clerk-Stenographer
R. E. Ewing	— Accountant
B. J. Godwin, B.Sc., B.Ed., P.Ag.	— Horticulture
(Mrs.) B. Gough	— Business Education
(Mrs.) M. Gravistin, C.N.A.	— Dean of Women
(Miss) M. D. Grimson	— Business Education
R. S. Hamilton, B.E.	— Agricultural Engineering-Irrigation
G. B. Harrison, B.S.A., P.Ag.	— Librarian
(Mrs.) K. L. Hicks, R.N.	— Nurse
R. A. Hill, B.Sc., B.Ed.	— Soils Science
E. F. Kasawal, B.Comm.	— Business Education
A. Masse, B.Sc.	— Farm Management
R. G. McFadyen, B.E.	— Farm Mechanics
N. J. Olsen, B.Sc.	— Animal Science
G. A. Ogston	— Farm Manager
K. R. Parker, B.Sc.	— Plant Science
A. A. Qually	— Recreation Supervisor
W. D. Ratcliff, B.Sc., P.Ag.	— Animal Science
(Mrs.) D. Robbins	— Academics (English, Social Studies)
L. B. Seeger	— Metal Work
H. W. Sutherland, B.Sc.	— Farm Management
M. J. Tsujita, M.Sc.	— Plant Science
R. P. Warrington, F.R.G.S.	— Dean of Men, Public Speaking
G. S. White	— Administrative Officer
(Miss) M. C. Wilson, B.H.E.	— Fashion and Design
S. B. Wilton, B.Sc., P.Ag.	— Animal Science
W. Woytuck, B.Ed.	— Academics (English & Social Studies)
M. A. Wriglesworth, B.Sc. (Ag.) Prof. Cert.	— Academics (Math., Science)

In the winter session Miss Diane Douglas served on staff in the Plant Science Department, on loan from the Horticultural Station at Brooks.

The position held by Mr. W. F. Arthur, who left at the end of December, has been changed to one in business education and was filled on December 1st by Mr. E. F. Kasawal, B. Comm.

Mr. S. Bernstein, B.Sc. Landscape Architecture, joined the staff on December 15th, 1967, to fill the position formerly held by Mr. R. Kroon.

Up-Grading of Staff

A continuing process of staff up-grading went on during the year. New staff in most cases, hold two degrees. Nine staff members participated in some form of up-grading during the year. This ranged from attending a conference of several days to one year leave of absence for study.

Construction and Planning

The following projects were included in the program of campus redevelopment:

1. **Student Residence** — Started in November 1966, this building was nearing completion at the end of the year.
2. **Heating Plant** — constructed in 1967.
3. **Maintenance Shop** — construction started in October 1967.
4. **Hog Studies Building** — completed in 1967. Some interior work unfinished at the end of year.
5. **Services Systems** — completed in 1967.
6. **Cattle sheds and feeders** — three of each were constructed.
7. **Staff Houses** — Two staff houses started in 1966 were completed early in 1967.
The farm manager's residence was demolished and the Principal's residence was moved to that site and a new basement added.
8. An extension to the Plant Science Building to provide four additional offices was built.
9. Plans were completed by architectural firms for an Administration Building and a Mechanics Building with a view to commencing construction before the end of the fiscal year.

Grounds and Plots

In spite of the extensive building program and the extended drought from late July to freeze-up, campus plantings made a good showing.

The yield of vegetable crops was well below average.

The production of Breeders' Seed of Olds creeping red fescue was discontinued. The crop had been grown at the college since 1932 and it was there that the Olds variety was developed by

selection. The licensing of the new variety Aurora by the Canada Department of Agriculture made it unnecessary to continue the production of Olds fescue.

Other projects for which the Horticultural Division assumed responsibility included weather records, water table and soil moisture readings on irrigated land and floral arrangements for offices and special events.

College Farm

High subsoil moisture and spring rains produced above average yields from all crops harvested. The first cutting of hay yielded about twice the average tonnage but the second cutting was very light.

SUMMARY OF CROPS HARVESTED

Crop	Acreage	Yield
Wheat	45	1,950 bushels
Oats	110	11,880 bushels
Barley	140	9,735 bushels
Hay	110	200 tons
Silage	35	120 tons
Pasture	175	

Livestock

During the season excellent grazing was available to the cattle and sheep which took them into the winter in good condition.

A Hereford bull with a high performance index was purchased for use in the Shorthorn herd to produce crossbred animals for teaching purposes.

The Suffolk and Dorset Horn sheep flocks are being built up by the use of top quality rams.

Three Yorkshire boars were purchased as sires for the swine herd.

Performance testing programs were continued with all breeds of livestock on the farm.

The poultry flock was sold and the poultry house demolished to take room for campus expansion.

INVENTORY OF LIVESTOCK AS OF DECEMBER 21st, 1967

Holsteins	56
Shorthorns	68
Sheep	105
Swine	170

FARM SALES FOR YEAR ENDING DECEMBER 31st, 1967

Livestock	\$18,432.90
Dairy Products	7,267.60
Poultry and eggs	814.79
Vegetables	1,026.90
	<u>\$27,542.19</u>

VERMILION AGRICULTURAL AND VOCATIONAL COLLEGE

Considerable activity marked the year beginning with centennial plans in the winter session, continuing with new construction on both campus and farm through the spring and

summer and extending through the long open fall to land leveling, road improvement and outdoor maintenance. New courses included soil science and agri-business in general agriculture, a certificate course in agriculture, home economics certificate course and hog production. Enrolment in both business education and agriculture were down, reflecting (in Agricultural Technology) higher entrance requirements.

Special Lectures and Visitors

During the year, students at the Vermilion College were addressed by a number of exceptionally well qualified persons supplementing the regular programs of instruction. The following were present during the year:

Thos. Lysons	Manager, Vermilion Savings & Credit Union
S. Shields	Federal A.R.D.A. Co-ordinator, Edmonton
Thos. Peters	Alberta Soil Survey Specialist, Edmonton
S. G. Klumph	Supervisor of Grazing Reserves, Edmonton
Dr. R. Cairns	Supt., Dominion Soils Research Station, Vegreville
Jerome Martin	Nutrition Specialist, Edmonton
Lyle Dunsmore	Industrial Assessment Supervisor, Edmonton
Andrew Kjearsgaard	Soils Analyst, U. of A., Edmonton
J. S. Kaiser	V.L.A. Land Appraiser, Vermilion
Dr. C. P. S. Brown	Sub-District Veterinarian, Health of Animals Division, Vermilion
D. Blair	A.I. Fieldman B.C.A.I., Milner, B.C.
Dr. M. E. Wilson	Ass't Manager, Eastern Breeders Assoc., Kemptville, Ontario
Donald Cox	Land Assessor, Edmonton

The college was also pleased to welcome as guests:

His Honour Lieutenant Governor Grant MacEwan
 Hon. Ambrose Holowach, Provincial Secretary
 Mr. Ashley Cooper, Deputy Speaker
 Dr. T. C. Byrne, Deputy Minister, Department of Education
 Fire Marshall Basil Nixon of Vancouver, B.C.

and others on the occasion of the official opening of the Fire Officers' Training Tower.

Graduation

Graduation exercises were again combined with the annual Alumni Reunion and Rose Ball on June 30, 1967. Centennial celebrations were included as a part of the program and co-ordinated with those of the Town of Vermilion. The Loyal Edmonton Regiment Band played musical selections until a fly past by a formation of CF-104 Starfighters from Canadian Forces Base, Cold Lake, signaled the beginning of the exercises.

The Hon. H. E. Strom, Rev. B. A. Hart, Mr. Barry McDonald, President of the V.A.V.C. Alumni Association, Dr. E. E. Ballantyne, Deputy Minister, and Mr. J. E. Hawker, Director, Alberta Agricultural and Vocational College, participated. Mr. Duncan A. Marshall, son of the late Honorable Duncan Marshall, Minister of Agriculture for the province in 1913 when the colleges were founded, gave the address to the graduating class. The Alumni

Association joined with the graduating class for the banquet and Rose Ball which followed.

Diplomas and certificates presented were as follows:

	Diplomas	Certificates	Total
Agriculture	37		37
A.I. Technicians		14	14
Home Economics	7		7
Business Education	6	26	32
	50	40	90

31 students in the graduating class received at least honors standing.

Winners of Major Scholarships and Awards:

Northwestern Utilities prize for General Proficiency in Home Economics — Doreen Guse of Coronation.

Hazel Hurt Trophy for General Proficiency in Business Education— Cheryl Zajic of Wainwright.

Vermilion Savings and Credit Union prize for General Proficiency in Agriculture — Colleen Huculak of Edmonton.

The V.A.V.C. Staff Medal for graduand judged by the staff to have shown outstanding leadership while attaining high academic standing — Melvin Clark of St. Albert.

The Jack Tucker University Scholarship for highest standing in the Animal Science Major — Colleen Huculak of Edmonton.

Wheat Board Surplus Monies Trust Fund Scholarship for General Proficiency — Doreen Guse of Coronation.

Donors of prizes to members of the graduating class were: The Spinning Wheel, Vermilion; Hareuther's Tom Boy Store, Vermilion; MacMillan-Brimacombe Agencies Ltd., Vermilion; Long's Drug Store Ltd., Vermilion; Vic's Pharmacy, Vermilion; Canadian Utilities Ltd., Vermilion; Vermilion District Co-operative Association Ltd., Vermilion; Canada Packers Ltd., Edmonton; Alberta Livestock Co-operative, Edmonton; Canadian Imperial Bank of Commerce, Vermilion; Vermilion District Graduate Nurses' Association, Vermilion; Taylor, Pearson and Carson Ltd., Edmonton; Northern Alberta Dairy Pool, Edmonton; Stephens Limited, Vermilion; Pioneer Grain Co. Ltd., Calgary; Vacstaff Association Ltd., Vermilion.

Scholarships and Assistance to Undergraduates

Many organizations encouraged students to continue formal education through cash grants, bursaries and scholarships to undergraduates at the college. Color Nights held toward the end of each session provided the opportunity to bring donor and recipient together for formal presentation of the awards. Donors met the successful students and were publicly recognized for the valuable support given the student and the college.

Scholarships to undergraduates awarded during the year were as follows:

The Jack Tucker Scholarship for Highest Standing in the Animal Science Major — Colleen Huculak of Edmonton.

Craigs Limited of Vermilion Scholarship for Highest Standing in the Animal Science Major — Judith Campbell of Lloydminster.

Alberta Pacific Grain Co. Ltd. for Highest Standing in the Plant Science Major — Vernon Schaab of Vermilion.

The British American Oil Company Scholarship for Highest Standing in the Farm Management Major — Wyett Swanson of Provost; John Hruza of Viking.

The Imperial Oil Scholarship for Highest Standing in the Agricultural Mechanics Major — Orest Borko of Thorhild.

The Robert Gardiner Memorial Scholarship (U.F.A. Co-operative Limited) for Highest Standing in the General Agriculture Program — Ross Hughes of Edmonton; Ron Guille of St. James, Manitoba.

The V.A.V.C. Alumni Scholarship for General Proficiency in the first two sessions — Gerald Owen of Tofield.

Bursaries have been made available to many other students through the courtesy of the following trusts and organizations:

The Claude Gallinger Memorial Trust Fund.

The Alberta Wheat Board Surplus Monies Trust.

The Alberta Wheat Pool.

United Grain Growers Ltd.

The Winnipeg Grain Exchange.

The Royal Canadian Legion, Alberta Command.

Remissions granted under the Students Assistance Act. Continued support has given students and staff much encouragement.

Special Events in 1967

Progressive Farming Days was held at the Vermilion College February 14-17 inclusive and attracted over 2,000 visitors to the exhibits of 29 commercial exhibitors and federal and provincial agencies. The emphasis was on mechanization in beef and hog production but displays on home modernization were included for the ladies. Several high school groups (numbers unrecorded) attended. Exhibitors appeared to be well pleased, feeling that most of those who came had a genuine interest in the displays as opposed to the academic interest commonly noted in visitors at fairs.

During this event a group of students from Fairview visited the college, touring the facilities and farm at Vermilion, and visiting a number of outstanding farms in the immediate vicinity. The party consisted of 28 students, two staff and a driver and remained for three days. Students of both colleges enjoyed the opportunity to exchange ideas and both groups benefited from the experience.

The Alumni held 3 reunion dances at the college, attracting good response from graduates of other years which assisted materially in maintaining College contacts with former students and retaining their interest and support. These reunions were held on March 3, June 30 and November 3, and drew approximate-

ly 150, 400 and 200 respectively. The June meeting was highlighted by the presentation to the college of the portrait of the late Dean E. A. Howes, first Principal of the Vermilion School of Agriculture in 1913. An oil painting done by Professor Knowlton of the University of Alberta staff was unveiled by the three daughters of the late Dean.

Forming part of the day's festivities, graduation day, June 30th was the official opening of the newly completed Animal Science Building by Dr. E. E. Ballantyne and Duncan A. Marshall, son of the late Hon. Duncan Marshall, Minister of Agriculture 1909 - 1921. Presented to the college were the keys by the Hon. F. C. Colborne, Minister of Public Works; two beautiful and valuable pastoral paintings for the new building by Mr. J. I. Jones, Q.C. of Mannville and a concrete speaker's platform in centennial design by the Students' Union.

Worthy of note were the new courses initiated in 1967. In March the new certificate program in agriculture began with five students. Interest appeared to be genuine and further applicants were accepted for the fall session. Intended to accommodate students ineligible to enter the diploma course in agricultural technology, emphasis was given to practical field operations, hence the timing of the sessions in spring and fall. The fall session ran smoothly with nine students starting and completing the session. Staff and students involved were agreed that this program provided a much needed and valuable form of training.

A new course in home economics was instituted beginning in September as a ten-month program leading to a certificate. Designed for girls having less than Grade X standing, the course of studies attracted 19 students, all of whom were recommended by educational counsellors but many of whom had little inclination for such training. By the year's end 8 had, for a variety of reasons, left, but as a pilot project the program should be regarded as successful. Modifications of the course of studies have been made from time to time and this flexibility has been the prime reason for the gratifying progress noted.

The hog production course, an entirely new venture, began in November and ran for one month. This session was to provide adequate background for the trainee during the three months apprenticeship on an approved hog production farm to follow. A further one month of classroom study following the field experience completes the program. Response from trainees was most enthusiastic and fewer than half the applicants could be accepted because of space limitations. The calibre of student was generally very high and good results were anticipated from this group.

An animal reproduction refresher course was instituted late in the year for up-dating A.I. technicians working in the field. A most impressive list of speakers was arranged and a week of intensive study and review followed for those taking part.

The course on land appraisal and assessment was repeated from April 24 to May 12, attracting 11 students most of whom had had extensive experience in the field. In addition to college staff, well qualified and experienced speakers were brought

in to address the group and several very worthwhile field trips were made. The course, although short, again proved very worthwhile.

Five fire officers' training schools of one week each were held, beginning May 22nd and through to June 23rd. Each group was especially concerned with one phase only of fire fighting and the college facilities now supplemented with the new fire training tower made possible very successful programs. Numbers attending were:

May 22-26	23 students
May 29-June 2	39 students
June 6-9	25 students
June 12-17	25 students
June 19-23	20 students

Parents' Days continued to add interest and proved again a most valuable contact with parents. They were well attended on February 18th and on November 4th. Students prepared programs of entertainment for their parents and acted as hosts to show them the facilities and introduce them to staff.

Non-College Events in 1967

The facilities of the college were made available to many diverse groups for meetings and short courses of an agricultural or educational nature. The following list indicates the extent of the services provided:

	Person-Days
1 Alumni Meetings — January 11	12
1 Farm Business Analysis Meeting — January 18	25
4 F.U. & C.D.A. Meetings	63
8 A.I.A. Meetings	186
1 Alberta Wheat Pool Committee Meeting — February 10	24
1 Fairview Student Visit — February 13-15	31
1 Thailand Teachers Visit — February 15-18	5
1 Parents' Day — February 18	118
1 North-Central Grazing Association — February 21	76
1 4-H Leaders' Conference — February 25	80
1 F.U.A. District Meeting — February 27	80
3 Alumni Reunions	750
5 4-H Dairy Club Meetings	103
1 4-H Council Meeting — March 7	25
1 Scout and Guide Leaders' Meeting — March 11	67
1 4-H Public Speaking Competition — March 14	54
1 United Church Lay Conference — March 31-April 2	76
1 Public Speaking Competition, District final	120
1 Agriculture Society Banquet — April 5	242
1 4-H Club area Speak-off — April 7	65
1 Horticultural Short Course — April 10-11	34
1 Public Speaking 4-H Club Regional Final	57
1 Women's Institute Convention — April 27	70
5 Fire Officers' Training Schools	132
1 Official Opening of Fire Tower — June 15	107
1 High School Counsellors' Conference — May 27	9
1 F.U.A. Board Meeting — June 2	13
1 4-H Club Week	180
1 Danish Exchange Farmers' Visit — October 15	16
9 Business Education Night Classes	253
1 Chamber of Commerce Banquet — November 1	34
1 A.I. Refresher Course — October 30-November 3	12
1 Parents' Day — November 4	97
1 I.O.D.E. International Luncheon	173
1 Alberta Hail Board Meeting — November 22	12
1 District 4-H Council — November 22	15

1	Vermilion Light Horse Club Meeting — November 23	17
1	Audio-Visual Class — November 25	20
1	Christmas Banquet — December 2	108
		<u>3561</u>

In addition there were 1082 other recorded visitors who toured the facilities of the college in groups.

Staff Off-Season Activities

Mr. J. F. Harcus continued his studies in educational administration at the University of Alberta while Mr. K. M. Stone studied communications at the University of Montana at Bozeman. Mr. W. S. Baranyk, Principal, left on a leave of absence for a year of study at the University of Illinois in curriculum planning leading to a M.Ed. degree. Mr. L. G. Seath was appointed Acting-Principal during Mr. Baranyk's absence.

Grounds and Plots

Restoration of campus lawns and plantings began late in the season after the peak construction activity had passed. The laying of storm and sanitary sewers, natural gas, steam, water, telephone and electric power lines and cables to street lights and fire alarm boxes involved considerable earth moving. Only the long dry summer made it possible to cope with the inconvenience this caused. Crop variety plots were planted and harvested as in previous years and the produce made available for class work in the Plant Science Division.

Maintenance Program

An unusual amount of activity was evident because of the construction underway. Renovations in the dormitories were completed. Much land leveling and road restoration was accomplished and temporary sidewalks of concrete blocks were laid wherever needed. Six offices and a dairy laboratory for the personnel of the regional extension staff were completed in the new college building. A large concrete pad was laid adjacent to the new Dairy Studies Building to eliminate in advance the problems of spring mud. New fences were also constructed in this area. Concurrent with this activity, a vigorous program of preventative maintenance was continued. The college was fortunate to have a Maintenance Supervisor of the calibre of Mr. O. Stangeland of D.P.W. He and his crew were most obliging.

Public Works Construction

1. **Central Heating Plant** — constructed in 1967.
2. **Animal Science Building** — (Second Phase) — completed in 1967.
3. **New College Building** — (Phase I) — completed in 1967. Regional offices are located temporarily on the second floor of the new building.
4. **Services Distribution System** — completed in 1967.
5. **Four Staff Residences** — completed in 1967.

6. A new feed shelter was constructed on the farm and filled with baled hay. It will permit feed to be stored more conveniently and preserved in good condition until used.

College Farm

Crops started well with adequate reserves of moisture from late fall rains and early spring showers. Seeding began May 9th and crops received their first severe setback from a late spring frost on May 19th. The summer was unusually dry with the result that early crops were good while the hay, summer pasture and late crops suffered. A field of barley along Highway 16 was excellent until a severe hail storm struck it July 28th and left a disappointing yield. There was no second cut of hay. The extremely long dry summer left weeds well under control but cut moisture reserves to an unusually low level. Harvest conditions were ideal and quality was generally high while yields were low.

Cropping Program 1967

Crop	Acres	Yield
Wheat	9	150 bushels
Oats	62	2600 bushels
Barley	35	1250 bushels
Hay	91	42 tons
Silage	45	210 tons
Pasture	80	
Summerfallow	68	

Livestock Inventory December 31, 1967

	Number
Dairy Cattle	37
Feeder Steers	15
Beef Heifers	5
Sheep	54
Swine	75
Poultry	430
A.I. Cows	51

Improvements on Farm 1967

Completed Hay Shelter
 Concrete pad in beef yard
 2/3 of concrete pad in dairy yard
 New fence around dairy yard
 2 Electric water bowls, 1 each in beef and dairy yards
 Automatic feeder for dairy barn
 1/2 mile new fence

Farm Sales January 1 to December 31, 1967

Vegetables	\$ 557.78
Milk	5,504.46
Cream	2,977.74
Eggs	1,702.90
Poultry	50.61
Livestock for Slaughter	12,578.06
Livestock for Breeding	220.00
Wool, Hides, Misc.	172.46
Total Farm Sales	<u>\$23,764.01</u>

The 1967 Academic Year

Enrolment for the year was as follows:

	Winter		Spring		Fall	
	M	F	M	F	M	F
1st Session Agriculture	35	2			17	0
2nd-4th Session Agriculture	71	2	8	2	25	2
Animal Reproduction	14	0				
Home Economics-Diploma	0	8	0	8	0	7
Home Economics-Certificate					0	19
Commercial	2	30	2	30	0	15
Grade XII Subjects only	11	7	7	5	14	4
Fire Officers			27*	0		
Appraisal & Assessment			11	0		
(3 weeks)						
A.I. Refresher (week)					12	0
Hog Production (1 month)					17	0
Agriculture Certificate			4	1	8	1
Totals	133	49	59	46	93	48

*5 - 1-week courses averaging 27 men per course

V.A.V.C. Publicity and Public Relations

The college through their staff made nine appearances on CKSA-TV last year and thereby kept interest high in the college throughout the surrounding area and helped the extension services reach the farming public with good ideas for running a farm. In addition, numerous tapes were recorded for later broadcast over CKSA Lloydminster and CFCW Camrose. The co-operation of these two stations has been very consistent and most welcome. The local weekly paper has provided excellent coverage for college activities and made the college front page news in the district.

Instructional and Administrative Staff for 1967

L. G. Seath, B.Sc., B.Ed., P.Ag.	Acting Principal
D. W. Bell	Metals
G. A. Boggs	Structures
O. W. Clouston	Accountant
H. A. Cross (Mrs.), R.N.	Nurse
G. J. Daugela, B.S.A., B.Eng., P.Ag.	Mechanics
A. F. Earle, B.P.E.	Recreation Director
H. J. Earle, B.Ed.	Academics
M. J. Fallas	Administrative Officer
B. A. Fulks (Miss)	Home Economics
S. E. Geake	Dietitian
R. M. Gratz, B.Sc., P.Ag.	Animal Science
J. F. Marcus, B.Sc., B.Ed., P.Ag.	Animal Science
J. A. Harrison (Miss)	Clerk-Stenographer
R. D. Heller	Farm Manager
M. Hynek	Mechanics
E. H. Horton, B.Sc., P.Ag.	Plant Science
J. P. Jeffers, B.S.A. (Honors), M.S.A., M.C.S.A.E.	Mechanics
S. J. Johnson	Structures
F. L. Kaiser (Mrs.)	Secretary
A. N. Klar, B.Sc., P.Ag.	Plant Science
E. Larson (Mrs.)	Home Economics

C. A. Missal (Miss), B.Sc.	Home Economics
K. F. Orton (Miss), B.Sc.	Commercial
A. M. Pinder (Miss)	Commercial
T. J. Quirk	Dean of Men
D. E. Robins, B.A., B.Sc., P.Ag.	Farm Business Management
A. Robinson (Mrs.)	Dean of Women
S. Y. Schaab (Mrs.)	Librarian
O. Stangeland	Maintenance Supervisor, D.P.W.
K. M. Stone, B.Sc., P.Ag.	Plant Science
R. V. Stredwick, B.S.A.	Animal Science
E. M. Taylor (Miss), B.Ed.	Academics
D. R. Westman (Mrs.)	Clerk-Stenographer
A. E. Wiebe, B.S.A.	Farm Business Management
M. J. Wright (Mrs.), B.Sc.	Home Economics
W. S. Baranyk, B.Sc., B.Ed., P.Ag.	Principal, on leave for Professional Improvement

FAIRVIEW AGRICULTURAL AND VOCATIONAL COLLEGE

1967 was a year of development and expansion of the campus facilities. These new and expanded facilities will make possible a wider and more comprehensive pattern of educational opportunity for the area served.

An active adult education program, including evening classes, was planned and late in the year, the first night classes were begun. Other classes will be started in early 1968.

A one-year certificate course in agriculture was started in November, 1967, for students with less than Grade XI, and was well received.

The apprenticeship training courses in welding and motors have continued to receive favorable response from the students enrolled.

The raising of entrance requirements in diploma agriculture courses and in the business education course, has reduced the number of students enrolled, by approximately the numbers we had enrolled with less than Grade XI in previous years. The arrangement with Fairview High School concerning academic students continued to receive wide acceptance. There has been an increase in demand for academic training but the numbers are limited to the accommodation available in the high school. The Fairview College provides supervision and residential accommodation while the high school provides instruction.

Guest Lecturers

The following visitors were guest lecturers for various college classes.

- Mr. Phil Thompson, Lecturer on North American Indian, Assumption, Alberta
- Miss S. Volstad, A.G.T., Edmonton, Alberta
- Mr. Leon Martin, Manager, Royal Bank of Canada, Fairview, Alberta
- Dr. P. Pankiew, Research Station, Beaverlodge, Alberta
- Mr. Bruce and Miss Lee of A.G.T., Edmonton, Alberta
- Miss Augustson, A.G.T., Edmonton, Alberta
- Mr. R. Skrypichayko, Canada Pension Representative, Edmonton
- Mr. G. Volk, Farm Credit Corporation, Fairview, Alberta

Meetings, Tours and Other Events

College facilities were made available to many organizations during the past year. Staff and students were involved in a few of the events. There were 119 events and this represented approximately 3,610 person-days.

Graduation

Graduation exercises were held in the college gymnasium on June 23, 1967. Guest speaker was Mr. Laverne Larsen, Guidance Counsellor, County of Grande Prairie, Grande Prairie, Alberta. Rev. K. Sauer gave the invocation and Allen Perkins of Debolt was valedictorian. Mr. J. E. Hawker, Director of Alberta Agricultural and Vocational Colleges, presented diplomas and certificates as follows:

	Diploma	Certificate	Total
Agriculture	28		28(18)*
Business Education	7	12	19(15)
	35	12	47(33)

*Centennial Citizenship Certificates.

Scholarships, Bursaries and Prizes

Students Assistance Act Prizes (\$50.00 each) to Joyce Bulhofner, Northmark; James Dechant, Friedenstal; Allen Perkins, Debolt; Gail Babuik, Spirit River; James Allan, Berwyn; Ted Reyda, Grimshaw; and Ann McLeod, Fairview.

Wheat Board Monies Trust Scholarship (\$100.00) to Cary Slett, LaGlace for achievement in past club work and work at 4-H Club Week.

Peace River Livestock Co-op Scholarship (\$50.00) to James Dechant, Friedenstal for proficiency in animal science.

British American Oil Company Scholarship (\$50.00 each) to James Allan, Berwyn, and James Dechant, Friedenstal, for proficiency in farm management.

Imperial Oil Ltd. Scholarship (\$50.00 each) to Stephen Werklund, Valleyview, and James Allan, Berwyn, Alberta.

Alberta Pacific Grain Co. Scholarship (\$50.00 each) to Jon Thomsen, Dawson Creek, B.C., and Dale Gervais, Valleyview.

Dr. Irene Parlby (F.W.U.A.) Scholarship (\$50.00) to Lona Isley of Beaverlodge, for achievement in commercial course.

United Grain Growers Scholarship (\$50.00 each) to David Hegland, Beaverlodge, and Stephen Werklund, Valleyview, for general progress, effort and proficiency.

Alberta Poultry Hatchery Association (\$50.00) to Jon Thomsen, Dawson Creek, B.C., for outstanding work in the agriculture course.

U.F.A. Co-op (Robert Gardiner Memorial) Scholarship (\$100.00) to Kenneth Miller, Fairview, and Jon Thomsen, Dawson Creek, B.C. for proficiency in general agriculture.

W.P. Loggie Scholarship (\$100.00) Allen Perkins, Debolt, to a graduating student for general proficiency at the Fairview College.

Provincial Sheep Breeder's Co-operative (\$50.00) Larry Ramstad, Armstrong, B.C., to graduating student with the highest marks in Sheep Husbandry.

Bursaries presented December 21st, 1967, were as follows:

Alberta Wheat Pool (Henry Wise Wood Memorial) (\$135.00 each) to Robert Finch, Grande Prairie, and Bill Van Dyk, Comox, B.C.

Surplus Wheat Board Monies Trust \$(100.00 each) to Joseph Farnsworth, LaGlance, and Barry Cryne, Bay Tree.

Special Surplus Wheat Board Monies Trust Awards for this year only (\$100.00 each) to Diane Buholzer, Grimshaw; Robert Glenn, Sexsmith, and Claude Bechard, Falher.

Canadian Legion (Alberta Command) (\$100.00) to Gloria Brown, Whitelaw.

Alberta Women's Institute (\$50.00) to Hendrika Lieverse, Beaverlodge, Alberta.

Winnipeg Grain Exchange (\$100.00 each) to Jeannette Hotte, Huallen, and Raymond Bigam, Worsley.

Kiss Farms Limited (\$100.00) to H. Alfred Cook, Fort St. John, B.C.

Albright Memorial (\$75.00 each) to Sheilia Burgeson, Hines Creek; and Glen Snelgrove, Fairview.

Fairview Chamber of Commerce (\$100.00) to Peter Van den Dungen, Fairview.

Farmers' Union of Alberta — District No. 1 (\$75.00 each) to Douglas J. Culshaw, Belloy and Dave Cunningham, Beaverlodge.

Summary of Courses and Attendance, 1966-67

	Winter	Spring	Fall
Agriculture — Diploma	60	0	43
Agriculture — Certificate	0	0	12
Business Education	25	25	19
Academic	25	25	36
Motor Mechanics (Apprenticeship)	5* & 6*	12	14
Welding (Apprenticeship)	12*	0	0
Welding (Special Arc)	10	9	0
Welding Night Class (10 weeks)	0	0	18
Land Appraisal (3 weeks)	0	5	0
Totals	153	77	142

(*Denotes Second Year Courses)

Extension and Publicity

Fairview College continues to enjoy excellent relationships with all news media through newspapers, on the radio and TV.

Radio station CKYL in Peace River continued free time on its farm broadcast program, as well as Dawson Creek, CJDC radio station.

The staff of Fairview College have participated in Career Days at various High Schools, at Fairs and 4-H Club events.

The college gained in reputation at the Grande Prairie Bull Sale in March with the sale of a bull to Mr. K. C. Armistead of Onoway for \$1000.00.

Twenty-eight of our graduating agricultural students with Mr. J. A. R. Palin and Mr. M. Baranszky-Job, toured the Vermilion College and area from February 12 to February 16, 1967.

Many groups and individuals toured the college during the year.

Maintenance and Construction

On April 1st, 1967, the maintenance of the Fairview College was transferred to the Department of Public Works.

1967 saw a substantial number of building contracts let as follows:

- (a) Farm Structures and Farm Machinery Laboratory
- (b) Girls' Residence
- (c) Plant Science Building
- (d) Animal Science Laboratory
- (e) Central Heating Plant
- (f) Maintenance Building
- (g) Installation of underground utilities including power, telephone, heat, water, sanitary sewer, storm sewers and gas lines.

This building program will permit the expansion of services offered by the Fairview College by the fall of 1968 when this section of the building program will have been completed.

Farm

Produced on the Farm

Silage	150,000 pounds	—	7,000 pounds/acre
Green Feed	60,000 pounds	—	3,000 pounds/acre
Hay	29,310 pounds	—	977 pounds/acre

Livestock Inventory

Kind	Breed	1966	1967
Poultry	California Greys	167	224
Dairy Cattle	Holsteins	18	18
Beef Cattle	Angus Charolais x calves		4
	Angus Shorthorn x		1
	Shorthorn	1	1
	Aberdeen Angus	44	50
Feeder Cattle	Mixed Breeds	32	50
Sheep	Suffolk	2	43
	Hampshire	1	4
	Cross-breds	99	96
Feeder Sheep	Mixed Cross-bred		106
Swine		199	

FARM SALES — For year ending November 30, 1967

Poultry	\$ 846.27
Pigs	5,106.15
Dairy Products	5,542.70
Sheep	2,357.56
Feeder Steers	6,408.50
Beef Cattle	4,499.73
Total Sales	\$24,760.91

Early in 1967 the hog herd was dispersed and the hog barn torn down to make room for the new heating plant. Plans are going forward to replace both the barn and the herd.

The number of beef cattle and sheep in the basic herds was increased to meet increasing instructional needs.

A slotted-floor shed for the confinement feeding of sheep was added to the farm facilities in 1967. This has created much interest as it is unique in this area. It is being used chiefly for the confinement feeding of feeder sheep.

The lack of moisture in the 1967 growing season limited our pasture and feed production. Demonstration plots were also adversely affected.

We continue to have many interested visitors to the college farm.

Instructional and Administrative Staff Changes

Mr. M. H. Jaque transferred February 1st, 1967, to Department of Youth.

Mr. J. A. R. Palin was appointed Principal as of May 1st, 1967, replacing Mr. M. H. Jaque.

Mr. George E. Bryce commenced September 1st, 1967, as Agricultural Mechanics Instructor, replacing Mr. J. A. R. Palin.

Mr. David Enns commenced August 1st, 1967 as Horticulture Instructor, replacing Mr. Baranszky-Job who resigned.

Mr. Harold King commenced May 29th, 1967, as Dean of Men, replacing Mr. A. J. Gingras who resigned.

Mr. Thomas E. Sydness appointed Animal Science Instructor as of June 5th, 1967.

Miss Barbara A. Armstrong commenced October 16th, 1967, as Dean of Women, replacing Mrs. M. I. Readman who was unable to return to work.

Mr. James L. Marr commenced October 16th, 1967 as a Welding Instructor.

Miss Edith L. A. Zajac transferred February 1st, 1967, as Commercial Instructress from Clerk-Stenographer II. She replaced Mrs. B. L. Kuntz who resigned.

Miss Gail Babuik was appointed Clerk-Stenographer II as of May 8th, 1967 replacing Miss Edith L. A. Zajac.

Mr. J. H. Nichols, Maintenance Supervisor transferred to Department of Public Works as of April 1st, 1967.

Instructional and Administrative Staff

J. A. R. Palin, B.Sc. (Ag.), B.Ed., P.Ag. Prof. Cert.	Principal
Miss B. Armstrong	Dean of Women
Miss Gail Babuik	Stenographer
G. E. Bryce, B.Sc., P.Ag.	Agricultural Mechanics
David Enns, B.Sc.	Horticulture
D. A. Fleming	Recreational Director Ass't Dean of Men
Mrs. M. J. Grove	Secretary
Miss D. M. Hoel	Registrar
Mrs. I. Johnston	Librarian
L. T. Jones, B.S.A.	Animal Science
H. King	Dean of Men
J. T. Lancaster, B.Sc., P.Ag., Prof. Cert.	Plant Science
R. E. Lloyd	Accountant
Mrs. W. D. Mahood	Nurse
J. L. Marr	Welding Instructor
H. E. McLachlan, B.Sc., P.Ag.	Animal Science
J. A. McIntosh	Farm Manager
W. B. McNaught, B.Sc., P.Ag.	Agricultural Mechanics
H. E. G. Petersen	Motor Mechanics
T. E. Sydness, B.Sc.	Animal Science
J. P. Tait, B.Sc., (Ag.), Prof. Cert.	Farm Management Vocational Academics
J. L. Volk	Farm Structures
J. H. Warne, B.Sc., B.Ed., P.Ag.	Farm Management Vocational Academics
L. M. Wendelboe	Welding
Mrs. M. A. Wilkesman	Dietitian, Assistant Dean of Women
Miss E. L. A. Zajac	Business Education
S. Zilke, B.A., B.Ed., M.Sc. (Ag.) P.Ag.	Soils Instructor

REPORT OF THE PLANT INDUSTRY DIVISION

A. M. WILSON, B.A., B.Sc., M.Sc., P.Ag., Director
 O. G. BRATVOLD, B.Sc., P.Ag., Field Crops
 W. LOBAY, B.Sc., M.Sc., P.Ag., Weed Control
 A. W. GOETTEL, B.Sc., M.Sc., P.Ag., Soils
 J. B. GURBA, B.Sc., P.Ag., Crop Protection and Pest Control
 P. D. McCALLA, B.Sc., P.Ag., Horticulture

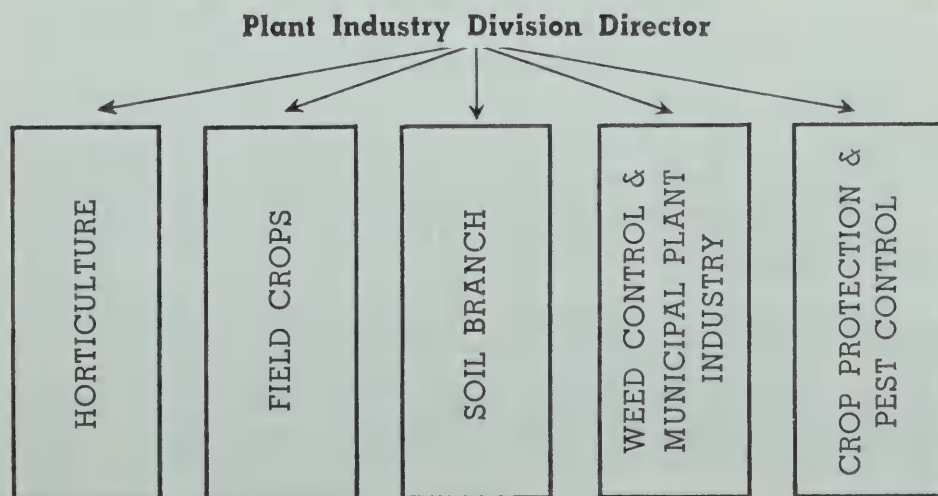
REPORT OF THE DIRECTOR

A. M. WILSON

The reorganization of the Department of Agriculture into seven main divisions also changed the organization within the Field Crops Branch. The Field Crops Branch was renamed the Plant Industry Division. Then within it, five major branches were established: Field Crops, Horticulture, Soils, Crop Protection and Pest Control, and Weeds, Ecology and Municipal Plant Industry Programs.

For administrative purposes the Regional Plant Industry Specialists report to Branch Head, Field Crops, Mr. O. G. Bratvold. The Horticultural Station with P. D. Hargrave as Superintendent and the Oliver Tree Nursery managed by J. Chedzoy report to the Head of the Horticulture Branch, P. D. McCalla. The Soil Testing Laboratory is administered by the Head of the Soils Branch, A. W. Goettel, and the Crop Clinic with D. Stelfox as Supervisor, is responsible to the Crop Protection and Pest Control Branch Head, J. B. Gurba. Weed control and other regulatory programs relating to pests and conservation of soil in municipalities function through the Weed, Ecology and Municipal Plant Industry Program Branch with W. Lobay as Head.

The Division chart indicates positions and lines of responsibility.



Horticulture includes

Horticultural Station
Nursery
Special Crops
Tree Planting
Fruit & Vegetable Inspector

Field Crops includes

Cereal & Oil Seed
Forage Crops
Apiculture
Regional P.I. Supervisors
Municipal Seed Plants

Crop Protection & Pest Control includes

Crop Clinic
Plant Pathology
Entomology & Pesticides
Animal Pest Programs

Soil Branch includes

Soil Conservation
Soil Fertility
Soil & Feed Testing Program

Weed Control & Municipal Plant**Industry Program includes**

Weed Control
Agricultural Fieldmen
Plant ecology & Herbicides
Supervisor Municipal Plant Industry Program

In February, the whole division was relocated on the sixth floor of the Agriculture Building. The present office arrangement has permitted close working arrangements among branches and personnel have in general appreciated this move.

While many crop years have been described as unusual, the current year has surpassed all others in many respects — notably three major snow storms in southern Alberta after mid-April with lower temperatures and late seeding general over all Alberta. Up to six feet had fallen in some areas in the three successive storms. Southern Alberta was still snowed under on May 12th. Normally most of the wheat is seeded by this date. Wet soil reduced the acreage intended for wheat even though wheat seeding continued beyond mid-June. Crop seeding in central and northern Alberta was also late and farmers in many cases shifted to earlier maturing crops. In the Peace River area rape-seed replaced considerable wheat acreage.

The growing season was as abnormally hot and dry as the seeding period had been cold and wet. Growth was rapid and near drought conditions prevailed particularly in the central Peace area. Crops matured unusually early and a long period of uninterrupted harvest weather without killing frosts continued into late October.

The quality of the crop was unusually good — well matured, dry and harvested under ideal conditions. Crops in the very northern areas of Keg River, High Level and Fort Vermilion were late in maturing due to late summer rains and an abnormally wet harvest season. Much of the crop was combined in a tough and damp condition and an estimated 25% still remains to be harvested.

The over-all yield of wheat was estimated at 22.7 bu. per acre compared with the long-time average of 21 bushels. The late, wet, cool weather during the seedling stage of growth enabled the crop to endure a dry growing season and mature a wheat crop above the long-time average. Light crops of barley and rape were harvested throughout most of the Peace River district. Early seeded crops were well rooted prior to the long dry period. The later seeded rape and barley crops were most noticeably affected by the dry weather.

In spite of optimism due to higher delivery quotas and an expected increase in price, the wheat acreage actually decreased by 126,000 acres. The late planting season required farmers to change seeding plans. The acreage of oats, flax and mixed grains decreased by 176,000, 50,000 and 120,000 acres respectively. Barley and rape acreages increased by 400,000 and 25,000.

The following table gives the area, yield per acre and total production of the principle field crops for the years 1966 and 1967.

	Area		Yield per Acre		Production	
	1966 —'000 ac.—	1967 ac.—	1966 —bu.—	1967	1966 —'000 bu.—	1967
Wheat	6,506	6,380	29.4	22.7	191,000	145,000
Oats	2,082	1,960	48.5	39.3	101,000	77,000
Barley	3,880	4,280	41.0	31.3	159,000	134,000
Fall rye	143	158	26.2	20.9	3,750	3,300
Spring rye	29	25	18.8	16.0	550	400
All rye	172	183	25.0	20.2	4,300	3,700
Flaxseed	347	171	15.9	11.7	5,500	2,000
Mixed grains	410	361	44.3	34.3	18,163	12,400
Peas, dry	8	10	23.9	25.0	191	250
Rapeseed	624	875	17.6	13.9	11,000	12,200
			—cwt.—		—'000 cwt.—	
Potatoes	25	22	153.8	133.9	3,907	3,000
			—lb.—		—'000 lb.—	
Mustard Seed	90	114	900	675	81,000	76,950
			—tons—		—'000 tons—	
Tame hay	2,938	2,875	1.61	1.36	4,730	3,900
Sugar beets	38	34	15.19	13.32	576	449

Crop Insurance

The Alberta Crop Insurance Act was passed in 1964. The Federal-provincial crop insurance agreement was completed in 1965 and crop insurance was initiated that year. The Alberta Crop Insurance Corporation was established to administer the insurance plan. The policy of the corporation has been to extend insurance to new areas as rapidly as it can expand its administrative capacity to satisfactorily service policy holders. The following table shows the results of three years of operation.

Year	Insured Farmers	Percentage of Eligible	Insured Acreage	Premiums Paid by Farmers	Risk Carried	Indemnities Paid
1965	1,312	45	250,000	232,000	3,230,000	48,000
1966	4,408	50	984,000	802,000	13,460,000	312,000
1967	9,892	54	2,271,000	1,934,000	38,020,000	1,250,000*

*Estimated

A separate Annual Report of the Corporation is prepared for the Minister.

FIELD CROPS BRANCH

O. G. BRATVOLD, P.Ag., Head

J. W. EDMUNDS, P.Ag., Supervisor, Apiculture

S. A. YELLAND, P.Ag., Supervisor, Cereal & Oilseed Crops

R. M. TRIMMER, P.Ag., Regional Plant Industry Supervisor — Lethbridge

R. W. NELSON, P.Ag., Regional Plant Industry Supervisor — Fairview

E. L. TREFFRY, P.Ag., Regional Plant Industry Supervisor — Vermilion

The professional staff of the branch was increased by two during 1967. Mr. S. A. Yelland joined the branch on March 1st as Supervisor of Cereal and Oilseed Crops. Mr. E. L. Treffry transferred from the Extension and Colleges Division effective November 1st to assume duties as Regional Plant Industry Supervisor for northeastern Alberta with headquarters at Vermilion.

PRODUCTION OF PEDIGREE SEED

Cereals and Oilseeds

The following table summarizes the estimated yields in bushels of cereals and oilseeds inspected for registration and certification.

	1965	1966	1967
	—thousand bushels—		
Wheat	1,519	1,961	1,211
Oats	608	824	597
Barley	822	1,609	686
Flax	114	105	93
Rapeseed			15

Forage Seed

The table below is a summary of reported acreage of grass and legume crops inspected for registration or certification:

	1965	1966	1967
Streambank Wheatgrass (Sodar)	18	328	128
Brome (Carlton)	135	548	962
(Fischer)	90	155	234
(Manchar)		45	45
(Redpatch)	16	88½	362
(Saratoga)	303	462	880
Creeping Red Fescue (Boreal)		2½	196
(Duraturf)		40	45
(Olds)	1,008	1,271	1,490
(Pennlawn)	287	496	102
Crested Wheatgrass (Fairway)	50	80	165
(Nordan)	819	1,108	1,315
(Summit)	55	63	117
Intermediate Wheatgrass (Chief)	40	40	
Meadow Fescue (Ensign)	11	60	110
(Mimer)		333	196
Birdsfoot Trefoil (Leo)		4	34
Timothy (Astra)	90	77	90
(Climax)	6,194	7,545	5,451
(Drummond)		663	395

Alfalfa (Beaver)	514	628½	635
(Ladak)	99	10	
(Rambler)	489	289	405
(Vernal)	96	317	367
Red Clover (Altaswede)	2	2	35
(Dollard)		25	68
(La Salle)	212	77½	77
Alsike Clover (Aurora)		163	127
Kentucky Bluegrass (Merion)	45	89	45
Orchard Grass (Chinook)	175	155	95
Reed Canary Grass (Frontier)	4	4	15
White Clover (Ladino)	40	110	30
Perennial Rye Grass (Norlea)	248	235½	769
Russian Wild Rye (Sawki)	11	71	360

With the exception of timothy there was a general increase in acreage of forage devoted to the production of pedigree seed.

Forage Seed Production (Non-pedigree)

Markets for most kinds were extremely tight in 1967. The European Common Market imposed some restrictions on importation of non-pedigree forage seeds which resulted in depressed prices for Canadian seeds. In addition many European countries have developed their own varieties which they prefer to Canadian varieties. Affected by this development are Alsike and Altaswede red clover, and to a lesser degree Climax timothy.

Danish creeping red fescue was offered on the British market well below Canadian offerings. Fescue prices to growers in 1967 were eight to ten cents per pound, approximately half that of a year earlier.

There was some decline in production, noticeably in fescue and timothy. Quality of grass and legume seed was exceptionally high.

The following table gives forage seed production of most kinds in the years 1965 to 1967 inclusive with preliminary estimates for 1967.

	1965	1966	1967
Alfalfa	750	371	1,250
Sweet Clover	2,500	2,100	1,700
Red Clover	5,500	6,500	5,500
Alsike	15,000	7,500	8,800
Timothy	1,600	3,000	1,500
Crested Wheat	750	600	475
Brome	4,400	3,000	2,500
Creeping Red Fescue	18,000	12,500	8,000
Russian Wild Rye	450	300	200

Distribution of Basic Forage Seed

The Field Crops Branch co-operated with the Canadian Forage Seeds Project in the distribution of Breeder and Foundation seed. All Breeder seed was distributed on the basis of contract production for the sale of the crop as Foundation to the Canadian Forage Seeds Project. All Foundation seed was released without a production contract.

The following quantities were distributed:

Breeder:

Roamer alfalfa	80 lb.
Aurora alsike	100 lb.

Foundation:

Climax timothy	125 lb.
Champ timothy	50 lb.
Redpatch Brome	425 lb.
Sawki Russian wild rye	75 lb.
Norlea Perennial rye grass	300 lb.
Boreal creeping red fescue	300 lb.
Rambler alfalfa	200 lb.
Leo birdsfoot trefoil	25 lb.

Improvement Policies

Forage crops promotion has been supported by three separate policies.

Project D — Field Demonstrations, Crops and Fertilizers

Under this project seed was supplied direct to District Agriculturists without cost for their use in demonstrating the value of improved varieties and fertilizer application. Total seed distributed was 379 lb.

Project G — New Varieties or Species Demonstration

The project was designed to introduce and demonstrate the value of newly developed species or varieties. No seed was distributed in 1967.

Interest in the two foregoing projects waned in 1967, indicating that they may have served their usefulness. The ARDA Soil and Crop Management Project was the most effective in promoting more and better use of forage crops.

ARDA — Soil and Crop Management Project

Twenty-seven local administrations, including counties, municipal districts, improvement districts and special areas, allocated \$51,596.36 of local funds toward the program. Under the terms of the project local administrations contributed 1/6 of the cost of the seed, with farmers paying 50% and the Provincial and federal governments equally sharing the balance.

Following is a summary of Federal and Provincial contributions paid out to counties and municipal districts:

County of Athabasca	\$ 6,202.41
County of Barrhead	7,692.90
County of Forty Mile	550.39
County of Lacombe	3,542.78
County of Lac Ste. Anne	7,995.93
County of Leduc	10,080.92
County of Paintearth	1,388.96
County of Ponoka	3,659.18
County of St. Paul	5,856.72
County of Smoky Lake	3,542.78
County of Stettler	1,300.11
County of Thorhild	3,607.68
County of Two Hills	3,521.81
County of Vulcan	46.67
County of Warner	1,394.90

County of Wetaskiwin	3,317.77
County of Wheatland	3,611.50
Municipal District of Bonnyville	5,803.35
Municipal District of Flagstaff	473.90
Municipal District of Lamont	5,218.69
Municipal District of Starland	266.67
Municipal District of Stony Plain	371.45
Municipal District of Wainwright	1,546.42
Municipal District of Westlock	9,462.13
Improvement Districts 65, 68 and 69	5,907.33
Improvement Districts 77, 78 and 95	2,644.31
Special Areas No. 2 and 3	4,185.07
	<u>\$103,192.73</u>

Fifty per cent of the above amount was recovered from the Federal Government in accordance with the terms of the ARDA agreement.

Alberta Cereal and Advisory Committee

The committee reviewed research data and recommended the following changes in the bulletin "Grain Varieties for Alberta".

1. Keystone barley was dropped from the list of described varieties.
2. Fraser, Grizzly and Sioux oats were added.
3. Reference to sunflowers was deleted.

The committee's report to the Alberta Agricultural Co-ordinating Committee included a review of the potential danger of ornamental barberry species in spreading rust in Alberta. Also included in their report was the recommendation that in efforts to increase feed production emphasis should be placed on yield of total energy per acre.

Alberta Forage Advisory Committee

This committee met in December and recommended to the Alberta Agricultural Co-ordinating Committee as follows:

1. That an increased emphasis on forage crops in the curriculum of the Faculty of Agriculture, University of Alberta, be considered.
2. That because of the importance of livestock in central Alberta an expansion of forage research at the Lacombe Research Station was desirable.
3. That the Alberta Department of Agriculture give consideration to undertaking testing of forage varieties.

The committee also reported on the potential to increase feed production for livestock in Alberta. A major break-through in production capacity for cattle and sheep would have to entail the conversion of a large portion of our present range and bush land to improved pasture.

The Seed Dealers Act

Twenty-one seed dealers were licensed under the Act.

Agricultural Relief Advances Act

Assistance, by authority of the Agricultural Relief Advances Act in the purchase of seed, fuel and oil, was provided to 199 farmers throughout the Peace River area. Total expenditure amounted to \$96,482.94.

Seed Control Areas Act

One seed control area was established in 1967. All of Improvement District 134 and the Municipal District of Spirit River was organized for the purpose of prohibiting the production of commercial mustard.

Initial steps toward the establishment of similar areas were taken in four other districts. These were Improvement District 139 and Municipal District of Fairview combined, Improvement District 131, Improvement District 125 and the Municipal District of Wainwright.

Potential danger of mixing mustard seeds with rapeseed was the reason for farmer concern which led to the interest in establishing seed control areas.

Municipal Seed Cleaning Plants

Two new seed cleaning plants were started in 1967. These were at Milk River and Boyle. The Boyle plant is the first all-steel seed cleaning plant to be built in Alberta. Cost of the plant was \$71,000.00 not including land, utilities, seed treater and office furniture. Contract for the construction of this plant was let to A.I.M. Steel of Edmonton.

The Alberta Co-operative Seed Processors Limited held their Annual Convention in Edmonton during January. Ten regional meetings were held during the summer at which operations were reviewed.

All municipal seed plants showed a substantial increase in volume of seed handled. Consequently most associations recorded an improvement in their financial position at the close of their fiscal year June 30th.

Requests for new plants from six communities were investigated as to feasibility with approval granted to two.

Summary of volume handled during the past two seasons is as follows:

	<u>1966-67</u>	<u>1965-66</u>
Total Commercial Seed Cleaned	15,303,985	13,217,161
Total Pedigree Seed Cleaned	312,271	201,920
Total Seed Cleaned	15,616,256	13,419,081
Total Dockage Cleaned	2,606,831	1,311,002
Total Bushels Cleaned	18,223,087	14,730,083
Total Bushels Treated (Fungicide)	6,019,518	5,394,693
Total Bushels Treated (Insecticide)	1,155,834	1,166,772
Average Number of Bushels Cleaned Per Plant	303,718	258,423

The Royal Agricultural Winter Fair

The Department continued its policy of assisting exhibitors at the Royal Agricultural Winter Fair, Toronto. The Plant Industry Division assembled and shipped exhibits to the show pay-

ing the shipping costs to Toronto. In addition to supervising the exhibits at the show all prize monies won by Albertans at the Royal were increased by 50%. A special honorarium of \$25.00 was paid for each first prize in the classes of wheat, oats, barley, rye, flax, alfalfa, alsike, red clover, sweet clover, brome, fescue, timothy, crested wheatgrass, field beans, russet (netted gem) seed potatoes, potatoes in the vegetable and cooking classes and 4-H Club exhibits. Such honoraria were increased to \$100.00 for championships won with exhibits of wheat, oats, barley, rye, flax and forage seeds.

Alberta winners at the Toronto Royal in 1967 were:

World Championships

Wheat (Chinook)	Larry Hixt	Beiseker
Barley (Compana)	Wallace H. Hummel	Milk River
Oats (Garry)	Terry Stachniak	Clandonald
Flax (Raja)	Harold Hansen	Vulcan
Potatoes (Seed)	Tona Ohama, Bill Darago	Rainier
Potatoes (Cooking)	Tona Ohama	Rainier

Championships

Winter Wheat	Geo. Luco	Lethbridge
Grass Seed	Donald Sherk	Huallen
Pedigree Wheat	A. G. Strain	Foremost
Beans (red)	Mrs. G. A. Waddle	Vauxhall

Reserve Championships

Oats	Tom Rhatigan	Edmonton
2-row Barley	Harold E. Hansen	Vulcan
6-row Barley	J. Kusuik	Hairy Hill
Beans (white)	Mrs. G. A. Waddle	Vauxhall

First Prizes

Bromegrass	J. Scriba	Heart Valley
Fescue	M. Dacenko	Sexsmith
Pedigree Barley (2-Row)	A. Pahel & Son	Leduc
Utility Potatoes	Ohama Bros.	Rainier

Regional Plant Industry Supervisors

One additional regional office was opened in 1967. An increased demand on the services of those Supervisors previously established in their areas was evident. The Regional Supervisors devoted a large portion of their time to soil analysis interpretations and to weed control problems. The Regional Supervisors acted as resource personnel to the Extension Service as well as co-ordinating Plant Industry programs within their respective regions.

Apiculture

Production in 1967 was the second largest honey crop in the history of the province. Estimated production was 16.7 million pounds, an increase of 4.1 million over the previous year. Number of colonies was up 5,500 for a total of 120,000 colonies.

A prolonged frost free period in most areas of the province in the autumn and above average temperatures caused plants to secrete nectar throughout September. Drought in most districts prevented an intense flow at any period during the summer, but the prolonged duration of the flow produced an increase of 30 pounds per colony over 1966.

Markets appeared much weaker at the end of the season than they had been for several years. This was attributed to some carryover from 1966 plus increased production in 1967. Labor strikes had an effect in slowing distribution to export and domestic markets. Devaluation of some foreign currencies, increased production in other countries and a fear of resulting lower producer prices has produced an element of uncertainty among honey producers.

Quality of Stock

Concern for maximum production per colony has made beekeepers more cognizant of management problems. A major problem was the quality of package bees and queens imported from the United States. Many contained partially or completely unmated queens and nosema disease infection. A survey of the industry indicated losses from these causes to be in excess of \$300,000.00.

Queens must be checked soon after death in order to determine adequacy of mating. This presented problems in getting samples early enough for accurate diagnosis. Brood patterns or lack of brood indicated queen fertility was a problem in 1967.

Samples of bees were taken for nosema checks from 550 packages. 42.5% of the samples were infected with nosema. Some samples molded in transit and could not be analyzed. Dead queens were received for nosema analysis. These were queens that were dead on arrival from the south or died in the colony and were removed from the hives by the bees. The latter are difficult to find. Of the 106 queen analyzed, 66% were infected with nosema.

California beekeepers, the California Department of Agriculture and the University of California, Davis, were made aware of these problems with a view to improving the quality of queens and bees in future.

Alberta beekeepers are wintering bees in areas of British Columbia on a trial basis. Two thousand colonies were moved into British Columbia in the autumn of 1967. Tests conducted by the Beaverlodge Research Station and the Alberta Department of Agriculture over the past three years indicated the main problems to be shortages of pollen and/or honey and a build-up of nosema disease.

Disease Inspection

	1966	1967
Number of Colonies inspected	7,684	15,447
Number of Apiaries inspected	914	1,804
Number of Apiaries infected with AFB	89	206

There was an increase in American foulbrood. Light infection appeared in several apiaries late in the fall. Many bee-

keepers discontinued prophylactic treatment at the normal calendar date but did not kill off the colonies until a month later than usual and the disease spores had an opportunity to develop.

European foulbrood was not a problem in 1967, only two cases were found.

Statistics

	*1966	**1967
Number of Colonies	114,000	120,000
Number of Beekeepers	1,150	1,375
Average yield/Colony (lb.)	116	139
Total Honey Production ('000 lb.)	13,180	16,668
Value of Honey ('000 dollars)	2,010	2,458
Average Price of honey per lb.	15 $\frac{1}{4}$	14 $\frac{3}{4}$
Average Price of wax per lb.	47	60
*Final	**Preliminary	

Leaf-Cutter Bees (*Megachile rotundata*)

These bees were originally imported into Canada from the United States for pollination of alfalfa. They have proven to be very effective pollinators of alfalfa. Growers who used 10-20 thousand cells per acre obtained yields from 600 lb. to 1,200 lb. of alfalfa seed per acre. Best results were obtained in southern Alberta where average daytime temperatures are highest.

SOILS BRANCH

A. W. GOETTEL, Head

D. H. LAVERTY, B.Sc., M.Sc., P.Ag., Supervisor Soil & Feed Testing

J. A. CARSON, B.Sc., M.Sc., P.Ag., Laboratory Supervisor

General

The weather conditions during 1967 coupled with heavy trash cover of the previous years' good crop kept wind erosion losses to a minimum despite the dry summer and fall. Water erosion losses too were minimal as run-off from snow melt was gradual. The heavy, unseasonal snow of April and May in the area south of the Bow River resulted in little erosion. The annual survey indicated that wind erosion was not as serious as the previous year in 30 of the 40 reporting municipalities, or 325 quarter-sections were seriously affected compared with approximately 380 in 1966. Serious water erosion was noted on approximately 1,070 quarters compared to 1,540 in the previous year. There were 113 conservation demonstrations on farms and 21 soil conservation displays at field days, fairs or exhibitions.

A general observation by farmers and agricultural authorities was that 1967 crop yields were much better than expected. Crops with adequate fertilizer made more effective use of soil and rainfall moisture than unfertilized crops.

Administration

The administration of soil conservation programs and policies continued under the Soils Branch. The operations of the Agricultural Soil and Feed Testing Laboratory continued at its location at the University with additional space provided in a house in

nearby Garneau district. A report on the laboratory operation appears elsewhere in this report. Considerable time was spent during the latter half of the year developing a computer program for interpretation of soil test results. This involved contact with research institutions in Alberta and elsewhere, and staff of the Economics Division and the Data Centre. The Supervisor attended the Western Section meeting of the National Soil Fertility Committee held in Saskatoon on soil testing.

The Soil Reclamation Project was revised and made available forage seed and fertilizer to demonstrate their use in reclaiming soil areas affected by wind, water or other causes. The policy of previous years was revised to provide these materials to farmers in areas where no Agricultural Service Board was organized. Under the revised project, three District Agriculturists areas had 31 applicants for 6,135 pounds of forage seed. The branch arranged to take over and continue a crop rotation-fertilizer demonstration project on the Fox Brothers farm at Silver alley. The demonstration was supervised by the Regional Crops and Soils Supervisor at Fairview. The results demonstrate the importance of legumes and fertilizer use on grey soils.

Publications

The general fertilizer recommendations were revised and printed as two publications; one entitled "Guide to Fertilizer Use in Southern Alberta", Publication No. 541-1, the other "Guide to Fertilizer Use in Central and Northern Alberta", Publication No. 541-2. Numerous releases on a range of topics were printed for use by field staff and to accompany soil test reports.

Alberta Soils Advisory Committee

This committee as an Advisory Committee to the Agricultural Co-ordinating Committee encouraged legislative changes regarding expression of fertilizer analyses on the elemental rather than oxide basis, established an Advisory Committee on soil testing research and organized a tour of research projects on soils and fertilizers. A compilation of soil and fertilizer test data was prepared and included for the first time, results of research tests conducted by fertilizer trade agrologists.

Legislation

No changes to the Soil Conservation Act (1962) were made during the year. Four notices were issued by Soil Conservation Officers which compares with five in 1966. There were 19 municipalities with by-laws to control the burning of stubble under which 321 permits were issued by Conservation Officers. There were also 19 municipalities having by-laws controlling the removal of top-soil under which 22 permits were issued. There were no cases where court action was undertaken respecting the Soil Conservation Act.

Extension

This branch provided information on soil management, clearing and breaking of land, fertilizer use, soil conservation, soil

testing, and related topics to farmers, farm young people, agricultural colleges, chemical and fertilizer dealers by various media such as meetings, press releases, short courses, radio and television. Twenty-six farmer meetings and short courses involved over 1,100 people. A total of 45 meetings involving research, industry, department and inter-departmental personnel were attended during the year. Three television appearances were made and numerous radio talks were prepared on timely topics on soil management and fertility.

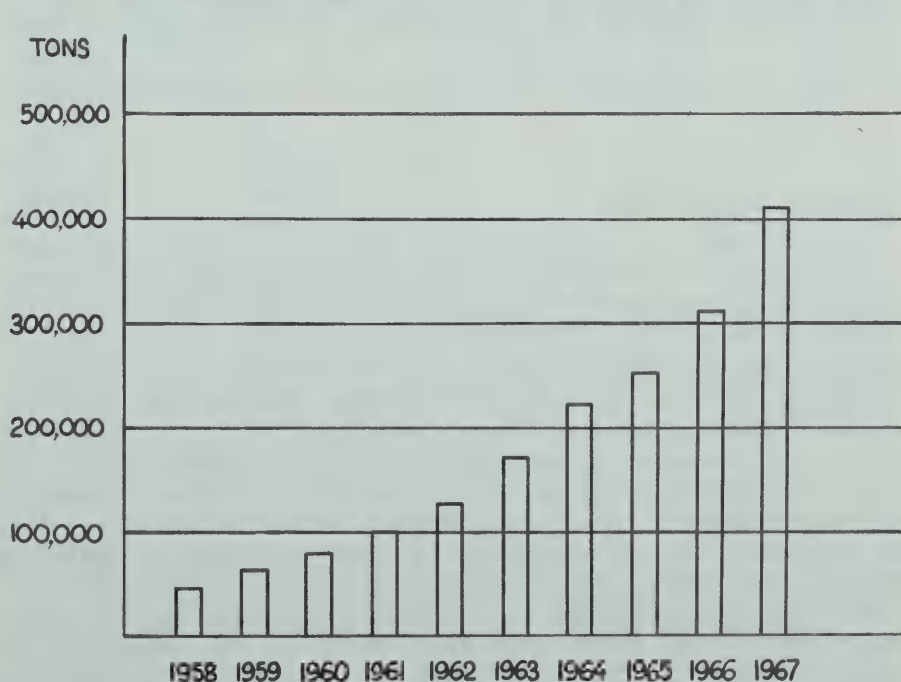
The Supervisor took part in some of the organizational meetings and filming of "This Business of Farming" for showing in 1968. The Supervisor attended the Royal Agricultural Winter Fair in Toronto as Plant Industry Division representative.

A spring survey of available soil nitrogen on fallow and stubble fields was conducted to determine if nitrogen values between fall and spring sampling were similar. The survey indicated that little change occurred. A similar survey was not conducted in the fall of 1967 because of lack of qualified staff.

Fertilizer Use and Demonstrations

Fertilizer use continued to increase in 1967 according to D.B.S. figures. The graph below shows the trend in fertilizer use in Alberta for the period 1958 to 1967. Sales in Alberta in 1967 totalled 409,472 tons compared to 316,113 tons in 1966 or an increase of 29 percent.

FERTILIZER SALES IN ALBERTA



There were 220 fertilizer demonstrations place on 130 farms in 1967, over 90 of these being harvested, involving 1,900 samples on which yields were determined. The results were returned to

District Agriculturists and Agricultural Fieldmen. Many of these involved the use of soil tests on potassium deficient soils.

A survey conducted through Agricultural Service Boards estimates that 66% of farmers in Alberta use fertilizer. Of this, approximately 70% of the fertilizer used is applied on cereals, 21% on forage crops and about 9% on other or specialty crops. The survey also indicates there are over 120 bulk fertilizer handling facilities and 430 fertilizer spreaders available for rent or custom application by dealers.

AGRICULTURAL SOIL AND FEED TESTING LABORATORY

Policy

A new policy on soil testing was introduced August 1, 1967. This policy was set to govern sample acceptance and allow soil sampling materials to be distributed to farmers by fertilizer manufacturers and their dealers, Municipal Agricultural Fieldmen and District Agriculturists.

The new policy also introduced a new fee structure. The charge of farmers, gardeners and greenhouse operators for a regular analysis of surface soil was two dollars (\$2.00) per sample. Where sub-soil samples were submitted in addition to surface samples the fee was one dollar (\$1.00) per sample.

The policy also encouraged the use of the soil testing service by Regional Soils and Crops Supervisors and District Agriculturists to solve local and regional soil and cropping problems. Samples received from these personnel were accepted without charge. A similar program was continued with research institutions, whereby samples from soil fertility research projects were accepted for testing without charge. Data from these projects was used to improve interpretations and recommendations based on soil tests.

Laboratory Operations

During 1967, facilities of the Soil and Feed Testing Laboratory were expanded to include temporary laboratory and office space in a Garneau residence. This space was required to provide working area for feed analysis and reporting, and space for machines used in preparing soil test data for computer interpretation. These facilities added greatly to the efficiency of the Feed and Soil Testing programs. The development of a computer system for interpretation of soil test results was undertaken. This was a joint project between research and department personnel, and the Provincial Data Center. The main objective of the system was to speed up the interpretation and reporting of soil test results to the farmer. Another objective of the system is to place all soil test data collected in a readily available form for rapid summarization and correlation, thus enabling the laboratory to supply valuable information needed by extension and research personnel.

The highlight of the year was the progress made toward completion of the new consolidated laboratory. Considerable

time was spent on space arrangements, laboratory design, and new equipment purchases. J. A. Carson spent two weeks touring soil and feed testing facilities in Eastern Canada and the U.S.A. to study operations and equipment similar to that which will be incorporated in the new consolidated laboratory.

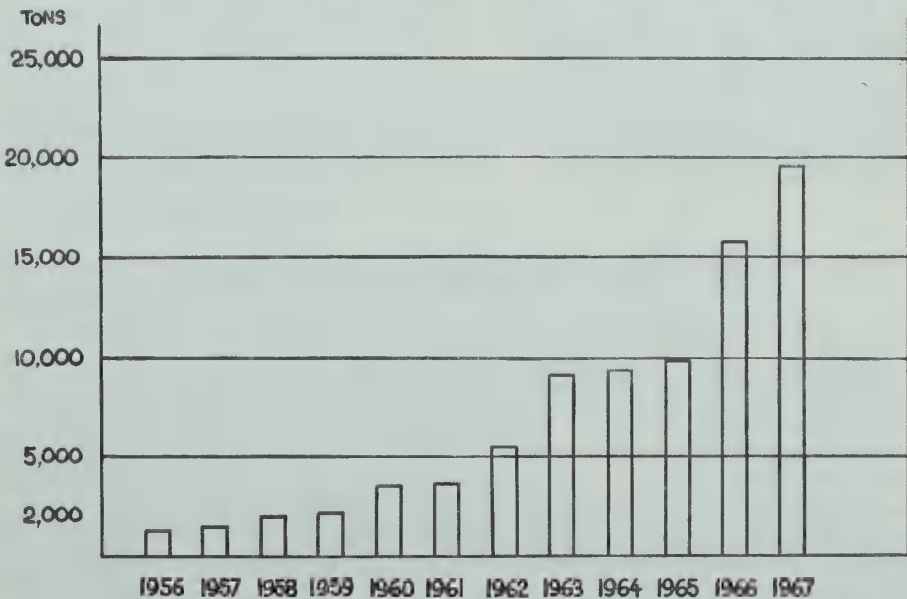
Sample Receipts and Reports Issued

The total number of soil and feed samples received by the laboratory continued to increase during the year. However, there was a marked reduction of feed, garden and greenhouse samples in the last quarter of the year. This may have been due to the substantial increase in fees charged for soil and feed testing. A total of 18,939 soil and feed samples were received which is an increase of 2,027 samples from the total of 1966. The laboratory also analyzed 3,048 samples under the co-operative and demonstrative program with District Agriculturists, Regional Crops and Soils Supervisors, Livestock Supervisors and research institutions. The following table shows the number of soil and feed samples handled by the laboratory during the last six years.

	1962	1963	1964	1965	1966	1967
No. of Samples	5,634	8,484	10,254	10,073	16,912	18,939

The graph below shows the trend in the numbers of soil samples analyzed by the laboratory for the period 1956 to 1967.

**NUMBER OF SOIL SAMPLES ANALYSED
BY ALBERTA SOIL & FEED TESTING LABORATORY**



A breakdown of samples received during the year is given in the following tables. The quarterly receipts showing the peak work load areas for each type of sample are given in the first table.

The breakdown of feed samples is given in the second table to indicate the type of feed material most frequently submitted for analysis and the demand for special analyses.

The final table lists the number of reports issued to persons submitting samples for testing. These figures give a good indication of the number of people making use of the various services of the laboratory.

Sample Receipts

Quarter	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total
Jan. 1 - March 31	547	2,332	13	147	3,039
April 1 - June 30	161	988	162	166	1,477
July 1 - Sept. 30	201	1,344	172	158	1,875
Oct. 1 - Dec. 31	618	11,842	15	73	12,548
Total for the year	1,527	16,506	362	544	18,939

Breakdown of Feed Samples

Quarter	Grain	Hays	Silage	Special Analyses*	Total for Quarter
Jan. 1 - March 31	224	200	109	213	746
April 1 - June 30	95	47	17	42	201
July 1 - Sept. 30	68	67	6	27	168
Oct. 1 - Dec. 31	275	162	181	182	800
Total for the year	662	476	313	464	1,915**

*Nitrate, Carotene, Prussic Acid.

**Many of the feed samples received were for regular and special analyses. Each analysis was recorded. This accounts for the greater number of samples analyzed.

Reports and Recommendations Issued to Farmers

Quarter	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total
Jan. 1 - March 31	252	615	10	45	922
April 1 - June 30	75	326	107	49	557
July 1 - Sept. 30	99	358	87	33	577
Oct. 1 - Dec. 31	265	3,158	15	30	3,468
	691	4,457	219	157	5,524
Average number of samples per report	2.2	3.7	1.6	3.5	3.4

A report on feed sample interpretation and the new policy on feed testing is included in the Animal Industry Division report.

WEED CONTROL AND MUNICIPAL-PLANT INDUSTRY PROGRAMS BRANCH

W. LOBAY

General

Generally cold spring weather prevailed which delayed the germination of weed seeds; much crop was sown before the weeds could be destroyed. For the third year in succession wild oat growth was heavy seriously infesting many fields. By June 10 some fields were reseeded but even in such cases this delayed seeding still produced a fairly heavy incidence of wild oats. Demand for both pre-emergence and post-emergence chemicals was heavy resulting in a serious shortage of herbicides for wild oat control.

General spraying for selective broadleaf control came all at once due to late seeding and full effectiveness of weed control was not obtained on many fields. In southern Alberta soft and wet field conditions resulted in much demand for aerial spraying. Results were generally good but many fields were left unsprayed because of the lateness of the season.

Crops came off early allowing ample time for fall weed control work but the extremely dry conditions prevented extensive effective tillage operations. The application of herbicides for fall thistle control continued in a number of regions.

Weed Inspection and Enforcement

a) Agricultural Fieldmen in Municipalities:

The municipal Agricultural Fieldman force has now expanded to 55 full-time employees, 12 full-time assistants and 84 part-time inspectors in municipal districts, counties and improvement districts where Agricultural Service Boards are organized. The ARDA Land Reclamation Project, which includes assistance for eradication of persistent perennial weeds, continued to be fully utilized by municipalities resulting in expansion of weed control programs in these areas.

b) Weed Inspection in Improvement Districts (without Service Boards)

There were 10 Weed Inspectors appointed by the department during the summer for improvement districts without Agricultural Service Boards. Because of lack of funds in some districts where settlement is small, considerable difficulty was experienced in obtaining personnel.

c) Weed Inspection in Cities, Towns and Villages

There were 170 Weed Inspectors appointed, mostly on part-time basis, to carry out weed inspection duties in urban centers. Arrangements were completed by a number of towns for rural inspectors to do their inspection work. These arrangements were satisfactory.

The Supervisor of the Weed Branch attended a number of urban council meetings to assist them in setting up a weed control

program. Two meetings were held with the inspection force of the City of Edmonton. Topics covered were weed identification, control methods, and public relations. Three demonstrations were set out in the outskirts of Edmonton regarding Leafy Spurge and Toadflax control to serve as first hand information for city inspectors.

d) Provincial Weed Supervisor (Fieldman)

One Provincial Supervisor was appointed for five summer months (May to September inclusive). He worked closely with Municipal Agricultural Fieldmen in assisting and encouraging them in their regulatory work and in setting up demonstrations. A considerable amount of supervision was given to the ten inspectors in improvement districts.

e) Regional Plant Industry Supervisors

Regional Plant Industry Supervisors, located at Fairview, Lethbridge and Vermilion, were involved in setting up of weed control programs at the regional level, assisting Service Boards with their programs and in conducting weed extension work including agricultural chemical schools.

f) Official Notices Issued Under the Noxious Weeds Act

The following table shows the number of official notices served by weed authorities to rural land owners in municipalities. (1963-66 records are listed for comparison purposes.)

Year	No. Notices to Destroy Weeds	Acres Affected	No. Notices to Prohibit Seeding	Acres Affected	No. Notices Prohibiting Threshing	No. Court Cases
1963	2,145	41,859	617	25,394	8	11
1964	1,759	35,992	624	24,701	5	10
1965	1,664	43,274	567	20,880	5	3
1966	1,373	38,655	598	15,110	4	3
1967	1,365	42,028	375	17,256	7	1

It is noteworthy that seeding was prohibited on 17,256 acres of cultivated land. This was due to serious weed infestations where control measures were not taken as directed by the Inspectors.

g) Legislation

The Noxious Weeds Act

The following major amendments were made to the Noxious Weeds Act:

- 1) The Agricultural Service Board of a municipal district or improvement district or the Agricultural Committee of a county, through its Agricultural Fieldman were named as the official authority to inspect, rate and issue permits to seed cleaning plants in a city, town or village located within the territorial boundaries of the municipal district, improvement district or county.

2) A person who obtains a permit must post it in a conspicuous place on the premises in which the seed cleaner is located and must maintain the permit in that place at all times during which the seed cleaner is in use.

3) Seed cleaning plant authorities may appeal the class of permits issued; the procedure for the appeal is outlined.

4) In a county any appeal of a notice served, or a class of permit issued to a seed cleaning plant, is to the Agricultural Committee appointed under the Agricultural Service Board Act.

5) Contraventions under the act or any regulations made under the act were clarified.

Weed Surveys

a) Survey of the Prairie Provinces

Spot surveys, by the Research Station in Regina, were made in a few districts to determine if any major changes in weed population of narrowleaf hawksbeard and hemp nettle had occurred since the survey in 1964. Reports showed an increase in narrowleaf hawksbeard with some slight increase in hemp nettle.

b) Five Persistent Perennial Weeds

Continuing annual surveys by Agricultural Service Boards indicate the following infestations:

Weed	1966		1967		Acres Showing Heavy Infestation
	Farms	Acres	Farms	Acres	
Hoary Cress	489	6,697	510	5,913	Lethbridge, Cardston, Pincher Creek
Russian Knapweed	97	699	82	453	Lethbridge, Taber, Claresholm
Field Bindweed	506	5,682	517	6,456	Lethbridge, Warner, Cardston
Leafy Spurge	221	4,347	228	4,377	Cardston, Provost, Pincher Creek
Toadflax	7,896	83,954	5,955	105,316	Throughout Province

The significant increase in toadflax infestation may have been due to more intensive surveys of pasture and rangeland. New patches were noted too in cultivated land. There was a sudden upsurge in infestations in the County of Minburn.

Sodium chlorate and borate-chlorate compounds were again used extensively but there was a significant increase in picloram (Tordon) on non-agricultural land including roadsides.

Other Weeds of Increasing Importance

Crepis tectorum (narrowleaf hawksbeard) continued to be a significant weed in the northern and central part of the province, with reports of its presence in the Peace River area.

Spergula arvensis (corn spurry) was reported from the Lacombe, Edmonton and Morinville regions.

Silene noctiflora (night flowering catchfly) is a problem weed in alfalfa and clover seed fields.

Saponaria vaccaria (cow cockle) was reported from new areas.

Galeopsis tetrahit (hemp nettle) increased in areas continually sprayed with 2,4-D.

Lolium persicum (Persian Darnel) is a problem grass weed in some parts of Peace River.

Chemical Weed Control

a) Selective Herbicides

Approximately 6,843,000 acres of cereal crops, or 55%, were treated with 2,4-D and/or MCPA; 407,000 acres more than in 1966. Adverse weather during the spray period for the third year in succession kept the spray acreage lower than predicted.

The average rates of application (ounces of active ingredient) per acre were as follows: (Manitoba and Saskatchewan rates are shown for comparison purposes.)

Formula	Alberta	Saskatchewan	Manitoba
2,4-D ester	6.0	5.3	6.4
2,4-D amine	7.0	5.9	8.1
MCPA ester	7.1	5.4	6.3
MCPA amine	7.7	6.4	8.2
MCPA sodium salt	7.6	7.0	8.6

2,4-D, MCPA and related compounds were the main herbicides used. Ester formulations continued to take the lead again but amine formulations increased by 18% over last year. The use of herbicides such as dichloroprop (Estoprop), dicamba (Banvel 3), and bromoxynil (Buctril M and Brominil M) continued to increase where "hard to kill annual weeds" were a problem. The higher cost of these newer herbicide mixtures is holding down their use.

TCA for green foxtail control again increased but the treated acreage still is small.

There were 1,304,000 acres treated on the prairies with wild oat chemicals compared to 850,000 acres in 1966. Of this total 32% was used in Alberta.

A total of 26,119 miles of municipal roads were sprayed for weeds and 4,772 miles for brush control. About 1,800 miles of irrigation ditches were treated with selective sprays.

Fifteen Agricultural Service Boards continued to distribute herbicides to farmers. There is a continuous decrease in this service as local distributors continue to provide service to farmers.

b) Soil Sterilants in Municipal Weed Control Programs

A number of soil sterilants were again handled by the branch in carload lots and sold to municipalities at cost less the assistance provided in the various programs. For elimination of patches of perennials on roadsides the department shared the cost equally with the municipality. On private land, the farmer paid one-third of the cost of the chemical.

The kind and amount of sterilants used during the last five years is shown below:

Sterilant	1963 (lb.)	1964 (lb.)	1965 (lb.)	1966 (lb.)	1967 (lb.)
Sodium Chlorate	185,284	215,264	234,976	250,208	188,489
D Bor Granular	140,450	140,500	136,400	102,200	102,350
Polybor Chlorate	92,665	72,460	58,020	26,270	23,450
Benzabor	3,375	1,800	1,475	1,400	1,500
Monobor Chlorate			37,500	22,400	
Monobor Chlorate D				3,350	61,450
Borolin				11,350	18,550
Picloram (Tordon 22K)				80(a.i.)	400(a.i.)
Total	421,774	430,024	468,371	417,258	396,189

(a.i. = active ingredient)

c) Spray Equipment

The estimated number of farm-owned sprayers is over 25,000. Sprayer schools continued to be popular. The branch organized five sprayer field days in June. The average attendance was 27 per meeting. The demand by farmers to calibrate sprayers was keen particularly for newer herbicides. There were 542 sprayers calibrated by the field staff.

Weed Control with Forage Crops (Project 2)

Under this policy, the department shared equally with the farmer the cost of forage seed for use on weedy areas. Seed for a maximum of 20 or 30 acres per farm is provided when approved by local agricultural authorities. Only twenty farmers used this project. They seeded 3,250 pounds of forage seed to combat weed problems. Seed for this purpose was also available to farmers from other local programs carried out by municipalities.

Weed Control on Crown Land

Municipal Agricultural Fieldman and Improvement District Weed Inspectors investigated and took action on many weed problems on Crown land. As a result of their action some unoccupied Crown land was leased to adjoining land owners with special lease concessions granted by the Department of Lands and Forests. In four cases, expenses incurred in controlling weeds were paid by the Department of Agriculture totalling \$429.00, the same subject to recovery should the land be sold.

A program to determine the best way to control weeds along lakeshores was continued at Miquelon Lake for the third year. Preliminary information reported by the Plant Science Department, Faculty of Agriculture at the University of Alberta indicates it is possible to eliminate thistle growth with a herbicide picloram used in small amount, with such growth being replaced with wild barley (*Hordeum jubatum*) and other grasses. Observations and assessments on other trials are continuing.

Roadside Seeding, Mowing and Spraying (Weed Control)

a) Municipal Roads

Most municipalities have adopted a policy of backsloping and seeding roadsides with a suitable forage mixture to control

weeds and prevent erosion. The extent of this project since 1963 is shown below:

	1963	1964	1965	1966	1967
Miles sloped and seeded	2,587	2,770	2,883	2,371	2,824

The department assisted in this program by supplying 66,600 pounds of seed as special grant to 56 municipalities for this purpose.

There were also 27,580 miles of roadsides moved.

b) Government Highways

The Department of Highways continued to expand its program of roadside seeding and the spraying of weeds on the right-of-way. The following is the extent of spraying done by the department:

	Secondary Highways Main and		District and other Roads in Improvement District	
	Miles	Acres	Miles	Acres
Weed Spraying	1,540	12,054	1,315	7,997
Brush Spraying	165	1,429	166	1,429

Alberta Weed Advisory Committee

This committee is advisory to the Minister of Agriculture through the Alberta Agricultural Co-ordinating Committee (A.A.C.C.). The Supervisor is the secretary.

The ninth meeting was held December 11, a week following the National Weed Committee meeting (Western Section) held in Vancouver. The Alberta Committee accepted the report and recommendations of the National Weed Committee (Western Section) with the following conditions:

- a) that more emphasis be placed on the spread of toadflax by seed,
- b) that fall tillage for fall application of wild oat herbicide be discouraged in areas where soil erosion is a problem, inasmuch as such tillage leaves soil vulnerable to erosion,
- c) that preference could be given to other selective herbicides rather than to picloram mixtures as this herbicide controls a rather narrow spectrum of weeds (in crops),
- d) that the use of picloram for spot treatment on perennial weeds be approved when the product is registered for that purpose,
- e) that prometryne not be recommended for weed control in peas.

The committee recommended through the Alberta Agricultural Co-ordinating Committee:

- a) that a specialist in weed control be appointed to work on chemical weed control in shelterbelts at the Oliver Nursery and other available areas,

- b) that the Supervisor continue to check further into the toadflax situation along Bow River with assistance if possible from Dr. Alex of Regina Research Station.

The committee recommended that certain publications be prepared, printed and made available for distribution.

Agricultural Service Boards

A Supervisor of Municipal Agricultural Programs was appointed in the Program Development Division. The responsibility of this position is to establish closer working relations between the department and the Alberta Association of Municipal Districts and to assist in developing programs involving all the divisions of the department. (See report under Program Development Division). Approval in principle was also given to employ a supervisor to develop, consolidate and promote Plant Industry programs relating to soil, weeds, pests, Seed Cleaning Plants and tree planting in Municipal Districts.

Another new Service Board was approved for Improvement District 102 (Lac la Biche), making a total of 57 boards in the province. This board, however, will not be active until 1968.

Most of the weed control work in municipalities was carried out through Agricultural Service Boards (Agricultural Committees in Counties). Provincial weed work including regulatory and educational aspects were closely associated with these boards.

Agricultural Service Boards, through the Agricultural Service Board Act, because of weed situations placed 267 quarter sections of land under supervision. Forty-four were held from previous years and 16 parcels were released from supervision. There were 18 parcels placed under reclamation, with 2 continuing from 1966. None were released in 1967.

The ARDA Land Reclamation Project continued to operate through Agricultural Service Boards. Assistance in the amount of \$75,000.00 has been fully utilized by municipalities. This project was outlined in the 1964 Annual Report.

The ARDA Soil and Crop Management Project came under the Service Board general agreement in 1967 and was utilized by 31 Municipalities.

Seed Cleaning Plant Permits

Under the guidance of this branch, Municipal Agricultural Fieldmen have inspected, rated and issued permits to all qualifying seed cleaning plants doing custom cleaning. A new score card was established and a number of schools held to acquaint inspectors in properly rating the plants. The total number of seed cleaning plants in the province not including elevator cleaning is 220.

Education and Extension

a) Meetings, Demonstrations, Tours, etc.

i) There were 207 field days and 50 tours arranged by the Agricultural Service Boards. This branch took part in 29 of them.

ii) Provincial weed control personnel spoke at 25 short courses and weed control meetings.

iii) Agricultural chemical schools were organized and held for the third consecutive year with dealers, agents and farmers participating. These were held at Lethbridge, Brooks, Red Deer, Acme, Grande Prairie and Vegreville with a total attendance of approximately 300. An additional 45 dealer meetings were held on a local basis conducted by Agricultural Fieldmen.

iv) This year there were 157 weed control demonstrations set up using selective and soil sterilant type chemicals. Ioxynil mixture for hemp nettle and picloram use for perennial weeds were demonstrated throughout the province. In a number of cases organizational work, including assessment was done by the branch.

v) A 4-day weed tour organized and conducted by this branch was held in the area covering Edmonton, Vegreville, Two Hills, Camrose and Lacombe. All interesting aspects of weed control were observed. Attendance by Agricultural Fieldmen, trade and a few farmers varied from a low of 12 to a high of 70.

b) Radio, Television, Publications, Other Releases

i) In the early spring a series of short radio talks were given on herbicides extensively used in the province. These were continued during the summer on timely topics.

ii) Four television shows were made covering weed control in fields, gardens and on aquatic weeds in lakes, streams and irrigation ditches.

iii) There were 25 press releases prepared and printed in "Farm Notes" on weeds and related topics.

The leaflet "Chemical Weed Control in Field Crops — 1967" was revised and a record of 12,000 copies were distributed. Mimeographed one-page leaflets on herbicides and related topics were again issued to field staff for inclusion in their weed information kit.

Conferences and Special Meetings

a) A Provincial Agricultural Fieldmen's Conference was held at the Banff School of Fine Arts on October 24, 25 and 26 with a total of 153 persons present. The conference provided, in part, an in-training course for the Fieldmen.

b) This branch assisted with the arrangement and took part in regional Service Board Conferences at Lethbridge, Lacombe, St. Paul, Castor, Evansburg and Fairview.

c) Special weed control workshops were held for Weed Inspectors.

d) The first Aerial Operators' Course was held in March in Calgary. It was a 3-day session organized by the Weed Control Branch and drew 100 persons. This was a very active group and resulted in organizing a Western Agricultural Pilots' Association. A summary of the proceedings of the course was published and distributed to those attending and to our field staff.

e) The Supervisor attended and presented a paper at the National Weed Committee Conference, Vancouver. The title of

the paper was "A Survey of Grain Damage by Herbicide Spray on the Prairies".

f) A paper was presented by the Supervisor at the North Central Weed Control Conference (N.C.W.C.C.) in Fargo, North Dakota, on "Weed Control Legislation in Alberta and Pesticide Use Regulations". A weed essay competition sponsored by this conference was won by Janet Thompson, of Delia, Alberta. Miss Thompson won a \$300.00 scholarship tenable at any university when registered in a course in agriculture or home economics.

CROP PROTECTION AND PEST CONTROL BRANCH

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CROP PESTS

Grasshoppers

The grasshopper infestation increased in southern Alberta by 1/4 over that of 1966. Of the 5.3 million acres in the infested area, 3.9 million were rated as "light" and 1.4 million acres as "moderate". The dominant species was the migratory grasshopper with patches of the two-striped species. The clear-winged species was scarce but more prevalent than in 1966. Scattered "hopper" infestations were found elsewhere in the province.

The accompanying map shows the approximate areas and degrees of infestation. The hatching of eggs extended well into July due to cool, wet weather. Because of heavy vegetation on roadsides there was little movement into fields until late summer. Damage occurred in the fall especially in fall-seeded crops as hot, dry conditions made native vegetation unpalatable. Control methods were necessary to protect crops.

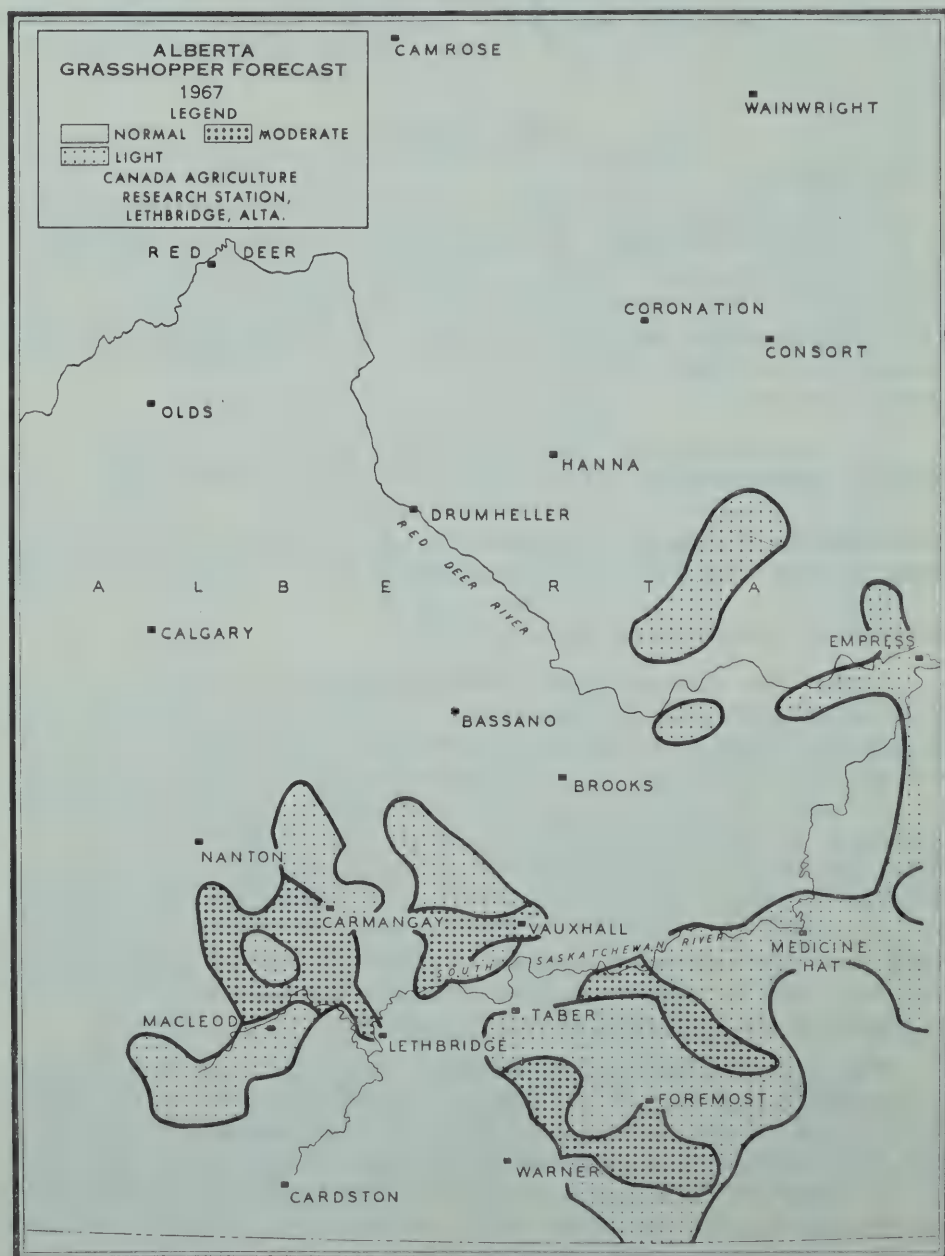
Under the grasshopper policy, the department distributed dieldrin and dimethoate insecticides at cost, less handling and shipping charges, through municipal and district offices. Dieldrin was recommended for use on non-feed crops and limited for use on cereals to the shot-blade stage of growth. To prevent residue problems in meat and milk, dieldrin was further restricted to farms where livestock were not kept. Dimethoate was recommended for use on forage, pasture and livestock feed. Checks by provincial and municipal workers showed that farmers generally used these chemicals properly. Each purchaser of insecticide was required to sign a declaration that emphasized correct use and placed the responsibility for misuse on the applicator.

The grasshopper, policy, forecast and map were printed and sent to municipal and district offices and other interested agencies. Information on control was distributed through revised Publication 622-4-1 "Grasshopper Control in Alberta". Publication 632 "Control of Field Crop Insects — 1967" was also revised for information on grasshoppers and other major crop pests. Several mimeographed sheets were circulated on timely topics.

The following table compares 1967 data on insecticides and size of infestation with that of 1964-66:

	1964	1965	1966	1967
Acres Land Infested	16,000,000	10,800,000	4,300,000	5,300,000
Acres Crop Menaced	2,000,000	1,300,000	800,000	900,000
Acres Crop Destroyed	4,000	500	250	400
Lb. Technical Dieldrin Used	10,040	1,060	390	700
Lb. Technical Malathion Used	1,450	250	400	
Lb. Technical Dimethoate Used	5,500	540	690	2,064
Acres Sprayed — Dieldrin	160,600	17,000	6,240	11,200
Acres Sprayed — Malathion	1,900	350	530	
Acres Sprayed — Dimethoate	29,300	3,000	3,680	11,000

The 1968 grasshopper forecast received from the Lethbridge Research Station indicates there will be considerable increase in grasshopper numbers with a relatively small increase in total area infested.



Cutworms

The pale western cutworm for the second year caused no economic damage. Very small numbers of adults were collected from light traps and populations were expected to remain low.

The red-backed cutworm caused economic damage in gardens, cereals, rape and flax in several districts of north-central Alberta and the Peace River area. Emergency supplies of dieldrin were shipped into northern points by the department when commercial stocks were used up. Endrin and dieldrin were used as control measures but some crops were severely damaged.

The 1967 cutworm forecast, prepared by federal research stations, was mimeographed and supplied to municipal and district offices.

Wireworms

Wireworms were found throughout the province but damage remained at a low level except in a few widely scattered fields.

Some damage continued to occur in potato and other root crops. Growers were advised to restrict soil treatment with aldrin or dieldrin as residues would pose feeding and selling problems. Municipal seed cleaning plants treated 1,155,800 bushels of seed with wireworms insecticide or about 7% of total seed cleaned in these plants.

A special project on wireworm treated seed was completed in co-operation with the Saskatoon Research Station. The results were published as a scientific paper in the Canadian Journal of Plant Science entitled "Phytotoxicity and wireworm control efficacy of insecticidal dressings applied to cereal seed up to a year before planting". This information was of particular benefit in allowing seed cleaning plants to treat seed throughout the fall and winter.

Other Cereal Crop Insects

The wheat stem sawfly increased considerably in numbers over a large area of southeastern Alberta. Damage was generally light to moderate but some fields were cut more than 40%. Resistant wheat varieties, Cypress or Rescue, were recommended for sawfly infested areas. It is expected that this increase in damage will continue with the return to drier climatic conditions.

Aphids infested some late seeded crops but the populations were held in check by rapid maturity and predators. Dimethoate or malathion sprays were used on some fall seeded crops.

Forage Insects

The sweet clover weevil continued troublesome in local infestations throughout the province. Research at the Lethbridge Research Station on cultural and chemical controls has shown that several short residual insecticides may be used without the problem of residues on clover forage.

The pea aphid was found in large numbers in some alfalfa fields. Damage other than reduction in carotene levels was reduced by irrigation or through use of malathion insecticide.

The alfalfa weevil was a problem in some fields near Lethbridge. The Lethbridge Research Station has started research projects on cultural and chemical controls of this insect as well as a number of other forage crop insect pests.

Clover thrips were reported in a number of fields of red and alsike clover in northern and central Alberta but no chemical control was considered necessary.

Vegetable and Special Crop Insects

The Bertha armyworm caused light to moderate damage to rape fields in the Three Hills, Stony Plain and Grassland areas. No practical chemical control was known without causing a residue problem. Two new insecticides were field tested in cooperation with the Saskatoon Research Station with poor results.

Flea beetles damaged rape and mustard seedlings in some areas and caused some damage to sugar beets in the south. Some seedling stands were sprayed with insecticide and good control was obtained. Other fields were heavily damaged and had to be reseeded. Lindane seed dressing continued to give good control during the seedling stage of growth.

Diamondback moth larvae were present in most mustard and rape fields. However damage was usually non-economic and little spraying was done.

Root maggots were a serious pest on onions, radish, cabbage and turnips. The Lethbridge Research Station tested a large number of insecticides on turnips at Lethbridge and Edmonton, and on onions at Brooks. Results were variable but in the Edmonton area not one of the test insecticides gave effective control. Unusual climatic conditions coupled with resistance to aldrin were mostly responsible for the heavy populations that developed on turnips and onions. Further testing and screening of new insecticides is planned.

Colorado potato beetle increased in most potato fields and gardens. There was some resistance to DDT but other insecticides continued to give effective control.

Shelterbelt Insects

Forest tent caterpillars caused light to heavy defoliation in aspen poplar in central and northern Alberta. Shelterbelts and ornamentals in urban areas, parks, resorts and on farms were effectively protected with DDT sprays.

Pear slugs were found on cotoneaster, plum and mountain ash. Common insecticides gave effective control. Lilac leaf miner was very troublesome on ornamental lilacs in urban areas. Dimethoate provided effective control.

Spruce sawfly infested shelterbelts and ornamental spruce in central Alberta at low levels and in spotty infestations. Spider mites and gall aphids were common on spruce across the province. Aphids were common on shade trees such as American elm and on various ornamentals. Dimethoate was recommended for most trees and shrubs as a band or spray treatment.

The poplar bud gall mite continued a problem on hybrid poplar in southern Alberta. Pruning of infested tips gave some control.

Local outbreaks of fall cankerworm caused some defoliation of trees in the south-central and southern areas. Recommended controls were effective. Carpenter ants and wood borers continued to be troublesome in urban and resort areas.

The strawberry root weevil continued to invade homes but was not an economic pest. Dieldrin gave control of the larvae that were considered causing serious damage to the roots of seedlings of numerous white spruce and lodgepole pine at the Oliver Tree Nursery.

The department's 50% grant for purchasing insecticide sprayers was used by five municipalities in 1967 to provide a total of twenty-seven of these special sprayers. There were 920 shelterbelts sprayed with municipal and department equipment. Publication 41 "Control of Insects on Ornamental Trees, Shrubs and Shelterbelts" was distributed for information and control measures.

Other Insect Pests

Numerous problems occurred from stored grain pests such as the rusty and saw-toothed grain beetles, carpet beetles and grain mites. Information was supplied to farmers for stored grain problems and to householders where food or homes were infested. Garden slugs were numerous in some urban gardens. Sod webworm and earthworms infested lawns in urban areas in south-central Alberta. Wasps were particularly numerous and troublesome to man and animals over most of the province.

Numerous other insect pests of crops and gardens were identified in addition to those handled by the Crop Clinic. Information on control methods was supplied as requested.

Bird Problems

Blackbird damage to corn and sunflowers continued to be a problem in southern Alberta. A working committee under the Pest Control Advisory Committee reviewed problems with nuisance birds and provided liaison between various agencies. The use of lure crops and scaring devices provided partial control for blackbirds. Sparrows and starlings were frequently reported as pests in warehouses, feedlots and farm yards. Live trapping and roost repellents were field tested and provided some control. Information on available control methods was supplied as requested for various bird problems.

CROP DISEASES

Diseases of Cereals

Generally disease occurrence was lower than normal mainly due to dry conditions during the latter part of summer. The severe ergot infestation of wheat experienced in the Calgary-High River area in 1966 decreased to normal levels. Stem rust

and leaf rust of wheat remained at low levels. The Canada Department of Agriculture tightened up regulations on the movement of ornamental barberry, considered to be a secondary host for the production of new races of cereal rust. Action was taken within the province to curtail distribution of barberry from government and commercial nurseries.

Timely articles were issued on the benefits and hazards of seed treatment for disease control. Municipal seed cleaning plants treated with fungicide 6,019,500 bushels or 39% of total seed cleaned compared to 5,394,700 bushels in 1966.

Diseases of Potatoes

a) General

The annual field survey of diseases was conducted in two stages. Early varieties were inspected during the second week of August by five provincial inspectors. Municipal inspectors from five co-operating southern municipalities were trained during this period. The final survey began August 28 with seven provincial and five municipal inspectors employed.

Good weather allowed for a thorough survey. Blackleg and Rhizoctonia were reported at high levels mainly due to moist conditions in early summer. Leaf roll and other virus diseases were generally low. Early blight was common in trace to moderate amounts with some southern fields treated. Late blight was of no significance compared to 1966.

b) Bacterial Ringrot

The control program was continued in established pest areas. A joint provincial-municipal program was operated for the second year in five districts: Counties of Newell, Lethbridge and Forty Mile, M.D. of Taber and I.D.'s 11 and 22. The grant schedule was revised to simplify the basis of payment to municipalities, on numbers of growers and acreage under permit. Work on field inspections was shared on about a 50-50 basis, with the municipalities handling most of the control measures on infected farms.

The bacterial ringrot directive for the 1966 crop specified that potatoes from infected fields must be sold by February 1, 1967, whereas, stocks from non-infected fields could be sold later provided these were sprout inhibited. Growers generally co-operated well in proper storage, disposal and sprout inhibition. Eight official notices were served but control measures were effected without court action. The department high pressure sprayer, operated out of Edmonton, disinfected 21 cellars plus equipment and machinery on 20 farms in the Edmonton and Calgary areas. The five co-operating municipalities in southern Alberta provided this service at cost in their districts.

Certified seed lists were supplied to all commercial growers. On infected farms growers were required to use certified seed. Despite a large surplus of potatoes which hampered operations on infected farms, the use of good seed, closer supervision and better management, resulted in a generally improved ringrot record for the second year.

The following tables show the crop situation and survey results by pest areas, with 1963-66 data for comparison purposes:

Pest Area	Year	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Acreage Infected	Farms % Infected	Acreage
*Lethbridge	1963	161	60	7,045	3,316	37.3	47.1
	1964	120	51	6,130	2,919	42.5	47.6
	1965	125	51	7,931	4,824	40.8	60.8
	1966	140	49	9,258	2,496	35.0	26.9
	1967	107	25	7,931	1,686	23.4	21.3
Calgary	1963	19	4	237	11	21.1	4.6
	1964	16	2	219	4	12.5	1.8
	1965	16	4	202	47	25.0	23.3
	1966	20	7	249	80	35.0	32.1
	1967	16	1	170	8	6.3	4.7
County of Newell (Brooks)	1963	35	7	2,477	260	20.0	10.5
	1964	35	11	2,461	337	31.4	13.7
	1965	38	11	2,896	367	28.9	12.7
	1966	48	11	3,782	390	22.9	10.3
	1967	42	7	3,377	308	16.7	9.1
Edmonton	1963	112	22	3,902	715	19.6	18.3
	1964	120	16	4,215	436	13.3	10.3
	1965	112	27	4,733	1,397	24.1	29.5
	1966	99	24	5,718	1,349	24.2	23.6
	1967	77	6	4,332	631	7.8	14.6
Total	1963	326	93	13,597	4,302	28.5	31.6
	1964	291	80	13,025	3,696	27.5	28.3
	1965	291	93	15,762	6,635	32.0	42.1
	1966	307	91	19,007	4,315	29.6	22.7
	1967	242	39	15,810	2,633	16.1	16.7

*During 1966-67 the Lethbridge Pest Area was handled as five separate districts under the new department-municipal control program, with the following results.

District	Year	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Acreage Infected	% Infected Farms	Acreage
M.D. Taber	1966	57	27	7,095	1,911	47.4	26.9
	1967	44	14	5,995	1,625	31.8	27.1
County of Lethbridge	1966	39	12	902	192	30.8	21.3
	1967	28	3	800	38	10.7	4.8
County of Forty Mile	1966	12	4	862	368	33.3	42.7
	1967	9	0	867	0	0	0
I.D. 11 & 22	1966	8	2	209	15	25.0	7.2
	1967	4	0	106	0	0	0
Perimeter Area	1966	24	4	190	10	16.7	5.3
	1967	22	8	163	23	36.4	14.1
Totals	1966	140	49	9,258	2,496	35.0	26.9
	1967	107	25	7,931	1,686	23.4	21.3

A total of 15,810 acres on 242 farms was inspected. Provincial inspectors assisted federal officers with inspection of certified seed fields, with ringrot found on two certified farms. The Crop Clinic established a temporary laboratory at Lethbridge and diagnosed specimens from all inspection districts. The total number of infected farms decreased from 91 in 1966 to 39 and percentage decreased from 29.6 in 1966 to 16.1. Infected acreage decreased from 22.7 in 1966 to 16.7 percent. The level of infection in most fields was found in trace amounts only.

The co-operation of the five municipalities in the control program resulted in continued improvement in the irrigated districts. The further development of grower-packer marketing organizations and processing plants also assisted in providing outlets for early marketing of infected stocks. Sprout inhibition proved useful over the last two years, particularly in preventing the use of culls for seed. In view of these developments, the directive for the 1967 crop allowed sale of infected stocks without any cut-off date provided these were sprout inhibited.

Control measures were discussed at meetings with growers and municipal and district officers. All growers with ringrot infection were contacted by registered mail and by several personal interviews, to advise and assist with orderly crop disposal and control measures. Various publications and articles were distributed to growers. Activities were further co-ordinated by working with the Alberta Potato Growers' Association, the Alberta Potato Commission, the Potato Improvement and Tuber Index Committees, and growers' selling agencies.

LIVESTOCK PESTS

Cattle Grubs and Lice

The use of systemic insecticides as a spray or pour-on treatment in the fall has become established practice for beef cattle. The simpler pour-on technique continued to replace spraying. Both methods provided effective control of warbles and usually adequate control of lice over winter. A survey of the Forestburg test area showed that warble control in the central part was exceptionally good seven years after the project terminated. Several more districts organized larger control areas on a voluntary basis for more effective control. The County of Wetaskiwin established the first Alberta compulsory warble control area. Following a petition by cattle owners the control area was set up by municipal by-law requiring treatment of all cattle in division 7 of the county. Most Agricultural Service Boards provided sprayers for demonstration or service spraying and supervised treatment in community projects. There were forty-seven control associations reported operating in 14 organized control areas. Some forty-eight demonstrations were carried out, plus service operations which involved 1,392 herds with 281,700 cattle treated for grubs and lice. Publication 653-6 "Warble Control" was prepared and widely distributed in co-operation with the Animal Industry Division.

Other Livestock Insect Pests

The black fly project in the Athabasca - Lac la Biche area was continued in co-operation with various agencies. Streams

in the area including the Athabasca River, were further surveyed to define breeding sites. Adult blackflies were collected for the second summer from fifteen farm co-operators, together with data on numbers, outbreaks, damage, weather conditions, etc. Department veterinarians investigated cases of sick and dead animals connected with blackfly attacks. Several larvicides were tested for control of blackfly larvae, with Abate showing promise as an effective but safer replacement for DDT. Articles on this aspect were published in the NCPUA Research Report. During the winter, meetings were held with County of Athabasca authorities and residents of Wandering River. Further meetings were held with university and federal researchers to co-ordinate work for practical but safe control operations.

Several districts were assisted in programs for community control of houseflies and biting flies. Wasps were found in unusually high numbers across Alberta, biting livestock and people. Publication 651-1 "Dairy Pesticides - 1967" was revised and distributed along with Publication 651 "Control of Livestock Insects". Several dairy field days were attended on insect control. A number of timely articles were prepared for radio, TV, the farm press, and district offices.

Magpie Control

Control demonstrations with poison sets were conducted in three districts to train new department and municipal officials. This was a continuing program to maintain trained staff who can assist with individual problems in all districts. A few reports of magpie damage to livestock were received. These were resolved by the use of poison sets or live traps. Several municipalities conducted winter control campaigns which greatly reduced magpie numbers. Thirty-two Agricultural Service Boards reported that 392 poison sets and live traps were used, and an estimated 12,800 magpies destroyed in winter campaigns, Publication 120 "Magpie Control in Alberta" and other information were supplied as requested.

Coyote Control

The approved poisons — cyanide guns, strychnine and sodium fluoroacetate (compound 1080) — were supplied free of charge to landowners in 87 approved municipalities which cover the settled areas of the province. Strychnine was the main poison used since it is simpler to set than the more complex cyanide guns. All old cyanide shells were replaced with new stocks in the interest of public and animal safety. The use of all poisons increased somewhat but remained well below the level of former years. The use of power toboggans for hunting coyotes and a fair price for pelt contributed to the reduced need for poisons. Coyote numbers varied by districts but generally remained constant.

The following table shows the amounts of major control material supplied and estimated coyote kills by the three poisons used, with 1963-66 data for comparison purposes:

	Coyote Getters	Cyanide Cartridges	Scent (2 oz. Jars)	Strychnine (Pellets)	Estimated Coyotes Killed
1963	600	1,300	990	50,800	21,900
1964	340	1,130	575	38,800	21,900
1965	94	700	610	36,650	19,840
1966	210	570	310	28,550	13,310
1967	110	840	405	33,500	14,880

In the fringe areas of settlement, coyote and wolf control was continued in co-operation with the Department of Lands and Forests, which is responsible for predator control in the forest (green) area. Five Pest Control Officers were employed during the winter in improvement districts without Agricultural Service Boards. During the summer provincial weed inspectors in improvement districts handled coyote control along with regular duties.

The poison 1080 was used in sparsely settled areas to assist farmers where other control measures were not sufficient. Meat baits were injected with 1080 poison by branch fieldmen and set by municipal and provincial officers. Under the co-operative program, the following districts used 1080 baits during the winter season:

District	No. Baits Set	District	No. Baits Set
Cardston, M.D. No. 6	31	Thorhild, County No. 7	2
Foothills, M.D. No. 31	19	Vermilion River County No. 24	10
Forty Mile, County No. 8	10	Vulcan, County No. 2	3
Grande Prairie, County No. 1 ...	8	Wainwright, M.D. No. 61	6
Kneehill, M.D. No. 48	4	Wetaskiwin, County No. 10	11
Lacombe, County No. 14	9	Willow Creek, M.D. No. 26	5
Leduc, County No. 25	14	I.D.'s No. 11 & 22	27
Mountain View, County No. 17	4	I.D.'s No. 46 & 50	4
Newell, County No. 4	11	I.D.'s No. 58, 65, 68 & 69	13
Pincher Creek, M.D. No. 9	12	I.D.'s No. 77, 78 & 95	2
Ponoka, County No. 3	3	I.D. No. 102	14
Provost, M.D. No. 52	2	I.D.'s No. 107 & 122	3
Red Deer, County No. 23	9	I.D. No. 109	7
Stony Plain, M.D. No. 84	1	I.D.'s No. 124, 125 & 126	2
Taber, M.D. No. 14	9	I.D. No. 131	1
		Total 1080 Baits 1967	256

The total approved districts remained at 80 and no new districts applied for 1080 use. A large number of districts shared baits and co-ordinated control on a regional basis. The following table shows the 1080 program for the last five years:

	1963	1964	1965	1966	1967
Number of 1080 Sets	368	448	402	242	256
Number Districts Using	47	52	47	28	40
Number Districts Approved	80	80	80	80	80

Three fieldmen working out of Edmonton and Lethbridge serviced 40 districts with 256 baits. Three new municipal fieldmen were trained in poison control techniques and issued with Form B training certificates.

A total of 125 premises were infested by rats during the year as compared to 215 in 1966. All infestations were exterminated by the end of the year and the province was in fact rat-free.

Generally good co-operation was experienced from residents, pest control officers, and municipal and other agencies. The program of co-ordinating action with Saskatchewan provincial and municipal authorities was continued. Better control on the Saskatchewan side plus the appointment of several new officers on the Alberta side resulted in improvement, particularly at Lloydminster, in I.D.'s 85 and 101, in the Municipal Districts of Provost and Acadia, and in the special areas. One official notice was issued to a feedlot operator, followed by court action, to get proper control measures established.

In the main, rats were successfully held along the 380 mile front from Montana to Cold Lake. Farther within the province, some rats invaded through transport facilities and shipping. A total of 137 suspected cases were reported investigated in 33 districts with two found positive. Some 250 Pest Control Officers were appointed by rural and urban municipalities to handle local reports. The department continued the 50% grant toward salaries and expenses of officers in six east border districts. Two provincial officers worked closely with municipal authorities, handled problem cases and control in northern improvement districts.

Anticoagulant poison baits were supplied free of charge to residents in the east control area and for suspected cases elsewhere. The following quantities of bait were used: Warfarin Ready Mixed — 17,500 pounds and Water Bait — 2,300 packages. Based on the amounts of poison used and average rat populations, an estimated 25,000 rats were killed.

Educational displays and demonstrations were used at summer fairs, on TV, radio and other news media. Rat control films, colored slide series, mounted rat specimens and control materials were used and supplied for various meetings. Newly appointed officers were trained and supplied with information kits throughout the province. Several articles were prepared for the press and Government publications. A paper entitled "Rat Free Alberta" was presented at the Annual Meeting of the Northwest Mosquito and Vector Control Association in Idaho, U.S.A

CROP CLINIC

Laboratory Services

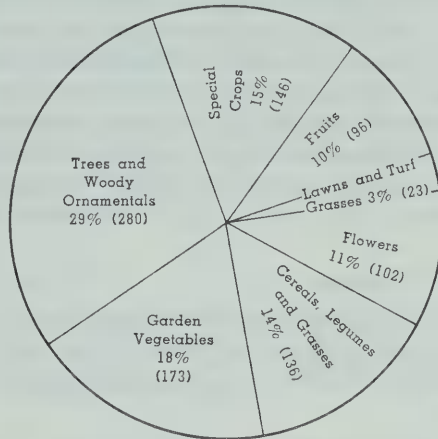
The primary responsibility of the Crop Clinic was to provide a diagnostic and identification service to the Plant Industry. In the laboratory was located special equipment and in the field of pathology specially trained personnel, which were not available in the Extension Service. Thus specialized diagnostic techniques were applied in an effort to combat plant diseases.

Plant Diseases Section

The Supervisor, Dr. A. W. Henry, working on a part-time basis, and a summer student, examined 956 plant submissions. Each submission frequently involved many separate plants or

seeds. The Clinic examined diseased specimens involving 125 different species of wild and cultivated plants. The circle graph indicates the relative proportions of groups of diseased plant submissions examined.

PLANTS AFFECTED



A. Crop Diseases

A total of 282 submissions were received — 78% of the submissions were forwarded through District Agriculturist offices and the remaining 22% came directly from the owner or from other agencies.

Leaf diseases of barley and snow mold of winter grains were prominent in the early part of the growing season in southern Alberta, as a result of unusual seasonal conditions. Serious damage to cereals and grasses from snow molds also occurred in the Peace River country. Prominent diseases were blights, discolorations and deformities of wheat heads. Much of the discoloration was associated with the fungus which causes glume blotch. Head blight was often associated with common root rot. Head deformity and partial sterility were frequently seen in plants showing additional symptoms suggestive of herbicidal injury. Chlorotic banding, a whitening and pinching-off of seedling leaves, occurred frequently in wheat and barley and was commonly associated with low temperatures in the early part of the growing season. Relatively few reports or samples of leaf and stem rust of wheat were received. Symptoms suggestive of mineral deficiency were noted in several samples of wheat, oats, and barley during early growth stages. The condition generally prevailed during below normal temperature periods.

Damage to rapeseed heads resulting from the white rust/downy mildew disease was again quite prevalent. In addition, numerous cases of herbicidal injury to rape occurred. In the absence of the necessary staff and equipment of virus disease detection the Clinic submitted crop plants suspected of carrying viruses to the University of Alberta.

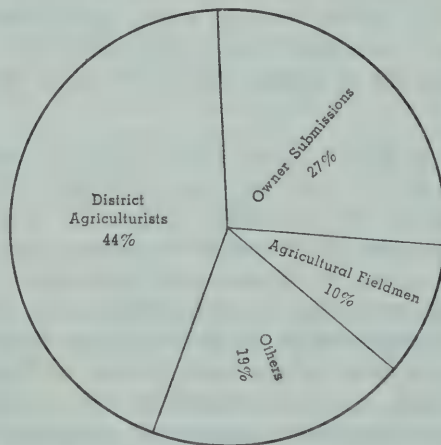
One lot of potatoes was found to be free from virus X, which was thought to be endemic in potatoes grown in Alberta. Potatoes and a number of other special crops were hard hit by a combina-

tion of extreme heat and dry weather in non-irrigated parts of the province. A condition in potatoes characterized by a breakdown of the central portion of the tubers followed by their complete collapse was widespread. Especially affected were early varieties dug during very hot weather in late August and September. However, many bins of late potatoes were similarly affected and a great deal of costly spoilage, sorting and re-piling took place. Losses in stored commercial carrots, turnips and cabbage, were also high especially where adequate cold storage facilities were lacking. The Plant Pathology summer assistant, working out of the Lethbridge Regional Veterinary Laboratory in September, examined potato specimens submitted during the Bacterial Ringrot disease survey in southern Alberta. The Clinic was grateful for help and advice received from Pathologists at the University of Alberta and at Federal laboratories.

B. Horticultural Diseases

A total of 674 submissions were examined, nearly 2½ times the number involving field crops. The circle graph indicates that less than half were forwarded through District Agriculturist offices.

SOURCES OF SUBMISSIONS



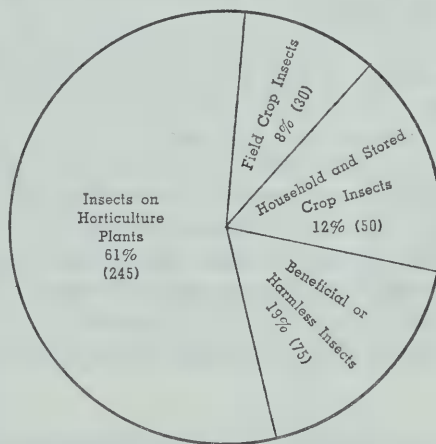
Non-parasitic diseases caused by unfavorable environmental factors accounted for more damage than those due to pathogenic organisms. Most noticeable, among environmental influences, was the effect of winter freezing and thawing on ground cover plants such as cedar and juniper. Late winter sunscald produced noticeable effects on several field plantings of young pine and spruce. Branch tips, and occasionally sizable portions of entire trees, of crabapples, apples, and mountain ash suffered a type of winter injury which was frequently mistaken by the owner for fireblight. This bacterial disease was present to a certain extent, but appeared to be less prevalent than in 1965 and 1966. Coinciding with abnormally high temperatures of late summer a considerable amount of leaf scorch, drought damage, and die-back affected various types of ornamental trees and shrubs. Die-back of birch was particularly prevalent. Plants showing symptoms suggestive of herbicide injury were received more frequently than in previous years. A *Gymnosporangium* rust of saskatoon, affected

not only the leaves, but in many cases destroyed the fruit. Among shelterbelt and other trees, *Cytospora* canker continued to be a serious threat. *Septoria* canker crippled countless hybrid poplars. Suspected mineral deficiencies became more noticeable during the late summer drought. Iron deficiency was particularly common on high-lime soils. Needle-cast fungi affecting pine and spruce were active and scattered over wide areas in north-central Alberta. Snow mold of lawns, and other types of winter-killing, followed a winter of heavy snowfall and a cold late spring. By contrast, garden root crops such as carrots and parsnips, harvested early during extremely hot fall weather, kept poorly and many home vegetable storage supplies were completely discarded by early November. Garden plot potatoes were frequently affected by asphyxiation and/or rotting organisms which spoiled them for household use.

Entomology Section

A total of 400 insect submissions were examined. The circle graph indicates the percent of total insects (numbers in brackets) in each general category.

Insect Identification Submission



A. Field Crops Insects

Flea beetles were responsible for damage to rape seedlings received from Peace River country in June. Bertha armyworms defoliated rape plants and damaged seed pods in August. Infestations were particularly heavy in the Stony Plain, Three Hills and Olds districts. Barley thrips in mid-summer again caused partial head sterility in several fields of late-seeded barley in north-central Alberta.

B. Horticulture Crop Insects

Hot, dry weather in mid-summer favored a rapid build-up in aphid populations on ornamental plants. Aphids were particularly numerous on native poplar. Wasps seemed to be encountered everywhere outdoors, during the summer, and in the fall their nests could be found in abundance on trees and bushes. Leaf-feeding beetles attacked various garden vegetables, fruits and ornamentals. Root maggots seriously damaged onions, tur-

nips, and cabbage in numerous gardens and fields in central Alberta, often despite attempt at chemical control. Submissions of lilacs attacked by leaf miners and leaf rollers were very heavy for the second consecutive year. Similar types of insects attacked poplar. Pear slugs, again, caused heavy damage to cotoneaster hedges. The larvae of a sawfly, which severely damages raspberry plantings, appeared to be on the increase. Spider mite populations were heavy on several different kinds of ornamental trees, shrubs and fruits. Their effect was particularly noticeable in decreasing raspberry fruit yields. Numerous plant submissions bore high populations of predatory insects. These appeared, however, to be unsuccessful in preventing a sharp rise in the population of many destructive insects. The feeding activities of the latter frequently contributed to the decline of trees and ornamentals already weakened by heat and drought.

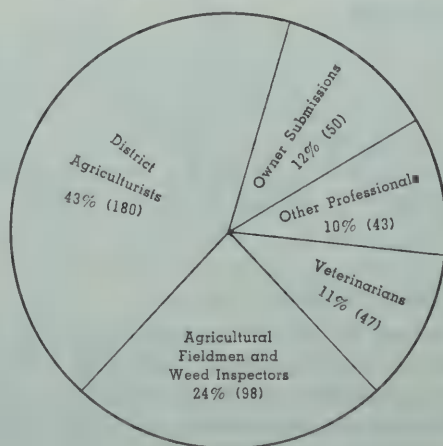
C. Household and Stored Products Insects

Specimens of larder beetles were more numerous than in previous years. Clothes moths and carpet beetles were also frequently received. The most commonly encountered pests of stored grain and dried cereals were flour beetles, larder beetles, mealworms and grain mites.

Plant Identification Section

A total of 862 submissions were identified. Weed plants comprised 307 of these, while plants other than weeds amounted to 158 submissions. In addition to the foregoing, an enthusiastic student summer-assistant making some 120 field trips in off-duty hours made 397 botanical collections for our herbarium. A sizeable portion of these collections were preserved by a special plastic laminating process. They were prepared for use as reference material by veterinarians investigating suspected plant poisoning of livestock, and by weed inspectors. The circle graph indicates the relative proportion of specimens (number in brackets) forwarded through extension offices, excluding our own field collections.

SOURCES OF SUBMISSIONS



Weed submissions, as in past years, were not representative of general weed problems faced by farmers, nurserymen and

gardeners. Samples usually comprised species difficult to identify without special reference material and equipment. Some exceptions included a bellflower (**Campanula sp**) which has successfully invaded numerous lawns, and black medick (**Medicago lupulina**) which resisted chemical control in some fields of grain. Weed seed screenings when fed to livestock appeared to be causing more difficulties than usual, especially when fed to swine. In such cases wormseed mustard was frequently blamed. Poisonous plants, in several instances, appeared to be associated with sickness or losses of range cattle on ranches in southwest Alberta. Water hemlock and tall larkspur were associated with several trouble spots. In one case, however, a species of groundsel (**Senecio integerrimus**) was incriminated and was suspected of being involved in others. This plant, although scattered, may be fairly widely distributed on the foothills range.

Special Investigations

A. Vegetable Storage Rots

A survey was conducted to determine the causes of serious losses in stored vegetables at several provincial institutions. Carrots, turnips, parsnips and onions were the main vegetables affected. Extensive sampling was undertaken and various laboratory techniques applied to isolate micro-organisms associated with tissue decay. A 16-page report, which concluded the survey outlined the main factors responsible for vegetable decay and suggested preventive measures.

B. Crown Rot of Elder in Nurseries

A survey of 10 commercial and institutional nurseries revealed the presence of crown rot in half of them. It was felt that this largely explains the wide distribution of this disease in private and other plantings of this shrub in Alberta. Also, the fact that lilacs and other ornamentals may be attacked constituted further reason for continuing to devote attention to this disease and its control.

C. Fireblight

Using a laboratory technique developed at the Clinic for the detection of this contagious bacterial disease, it became evident that freshly infected specimens were needed for successful isolation of the causal organism and diagnosis of the disease.

D. Bacterial Ringrot of Potatoes

A total of 74 submissions were examined for the presence of ringrot bacteria. Samples were collected by inspectors conducting the annual field survey. A number of the samples were examined by a student plant pathologist temporarily stationed at a laboratory in Lethbridge.

E. Air Pollution Plant Indicators

Further collections of lichens were made, as part of a continuing survey to find suitable plant indicators of certain types of air pollution problems.

F. Poisonous Plants

Field investigations were conducted in an effort to locate species of groundsel (**Senecio spp.**) suspected of causing cattle poisoning on foothills ranges. A number of collections were made from scattered growths and these were preserved and held pending positive identification. Collections were also made of more common and widespread poisonous plants such as water hemlock and tall larkspur on cattle ranges where losses had occurred.

Extension and Communication

Services of the Crop Clinic require communication mainly with District Agriculturists, Veterinarians, Agricultural Fieldmen, town and city parks personnel, nurserymen and greenhouse operators. To help fulfil this function several hundred letters and bulletins on pathology, entomology, botany and zoology were distributed. In addition the Supervisor, one part-time pathologist and two student-assistants attended 29 meetings, undertook 105 field trips, and were involved in 12 special investigations. Three scientific papers were published and several formal presentations were made to various professional and farm group meetings. Frequent consultations were held with professional personnel at the two Universities, Federal Research Stations, and Agricultural Colleges. The reference library of professional journals and publications was increased and a portion of time was devoted to study of this material, as well as in making use of the university research library. Thus the professional staff of the Clinic attempted to maintain contact with changes in field practice on the farm, with recent research developments, and with professional workers in similar fields of endeavor.

PEST CONTROL AND PESTICIDE COMMITTEES

The Branch Head served as secretary of the Pest Control Advisory Committee which held its 11th annual meeting in December. The P.C.A.C. with representatives from provincial and federal entomology, plant pathology, health, wildlife, and industry, served as a liaison group and resolved a number of problems involving conflicting interests.

The Branch Head also served as secretary of the Alberta Interdepartmental Committee on Pesticides which held its fifth meeting in April and its sixth meeting in December. Various problems of concern to different departments and agencies were resolved e.g. pesticide residues, training and licensing of commercial pesticide applicators, etc. A number of sub-committees under P.C.A.C. and A.I.C.P. served as working parties on various problems during the year.

The Branch Head served as provincial representative for the National Committee on Pesticide Use in Agriculture (NCPUA). The annual meetings of the western sections of NCPUA were attended in October at Saskatoon by the Supervisor, Entomology-Pesticides and the Branch Head. The Western Committee on Crop Pesticides and the Western Committee on Livestock Pesticides dealt with various problems on a regional basis and developed recommendations for the control of crop and livestock pests. The

guides developed by the WCCP and the WCLP were used as bases for preparing provincial publications, and were distributed as reference material for district and municipal offices.

Several meetings were attended as a follow-up to the National Conference "Pollution and Our Environment". The Branch Head served on the recently organized Alberta Advisory Committee on Pollution Control, including several working sub-committees.

PESTICIDE RESIDUES

More than 1,400 samples were analyzed for pesticide residues and 27 of these samples were food products that contained organochlorine insecticides over the tolerances allowed by the Food and Drug Directorate. Through grower co-operation, these products were not permitted to enter commercial markets. The Branch co-operated with the Dairy Laboratory, the Food Residue Committee, the Veterinary Services Division, and other agencies concerned in conducting special investigations on problem cases to determine the source of residues and to advise the producer or processor on preventive action.

Other Agencies or Specialists were consulted on the more difficult problems for techniques or follow-up investigations. Major problems in residues involved 1) root crops and forage grown on soil previously treated with long lasting insecticides, 2) milking cows fed suspected contaminated feed particularly root crops and forage, 3) livestock and poultry fed mixtures containing seed grain treated with aldrin or heptachlor for wireworm control or treated with an organo-mercurial for disease control, and, 4) potatoes fed to livestock under the Potato Diversion Program.

The above disposal program, sponsored by the Canada Department of Agriculture, was administered by this Branch. There were a total of 107 claims finally approved, with 20 diversions to starch manufacture and 87 to livestock feed. All potatoes fed to livestock were analyzed and only 6 contained negative residues. A safe feeding rate was established and feeding of potatoes was closely supervised. Over 6,600 tons of potatoes were fed to livestock and 1,600 tons were diverted to starch under this program, for a total of about 8,300 tons or over 400 carloads. Alberta potato growers realized over \$124,300.00 from the disposal of surplus potatoes.

Milk and other dairy products and animal products were randomly sampled to ensure that the public received safe milk and food. Most residues in vegetables came from land treated with aldrin or dieldrin in previous years. Considerable information and guide lines were developed which will be useful for resolving future problems.

The Branch co-operated with Food and Drug in handling residue problems in food and with Canada Agriculture on residue problems in commercial feeds. Most actions were preventive to ensure that only safe food entered market channels and that animal products such as milk, meat, and eggs did not become contaminated. Two cases of contaminated eggs from feeding

poultry with treated seed were put under detention by Food and Drug. On one farm, heptachlor residues were well above permitted levels and the flock of chickens was destroyed by mutual agreement with the owner. In the other case, mercury was found in the poultry and eggs and the farmer elected to hold the flock until the residues were reduced to a safe level. The decontamination period lasted three months before Food and Drug released the eggs and poultry products for sale. Much useful information was obtained that provided new guide lines on mercury degradation in laying hens.

Warnings were issued through a new Publication 607/400 "Pesticide Residues Can be Serious", circulars, farm meetings, radio and TV, on how residues develop and how they may be prevented. Through close co-operation between federal and provincial agencies problems were kept to a minimum and the safety of the consuming public was maintained.

MISCELLANEOUS

The Branch Head and the Supervisor, Entomology-Pesticides, spoke at 54 public meetings, short courses and field days. Seventy-eight conferences and committee meetings were attended. Nine Municipal Council and Agricultural Service Board meetings were attended on various pest problems. Eight articles were prepared for Farm Notes and the farm press. Twenty-seven radio and TV interviews were made, including a section on insect control for the annual TV program "This Business of Farming". The Branch co-operated with the Department of Health and other agencies in operating a training and licensing program for commercial pesticides applicators. In July, the Supervisor, Entomology-Pesticides, attended a U.S. National Conference on "Educational Aspects of Pesticide-Chemical Usage" in Colorado. He also attended in Saskatoon the last meeting of the International Great Plains Conference of Entomologists. After 40 years, this organization disbanded because of lack of support. The Branch Head served as a member of the Central Rabies Control Committee. Liaison was maintained with university, provincial, federal and industry agencies in connection with pest control and pesticide use. Seven printed publications were prepared or revised and distributed. There were 583 field investigations made on various pest problems.

HORTICULTURE

P. D. McCALLA, B.Sc., P.Ag., Head
P. D. HARGRAVE, B.Sc., M.Sc., P.Ag., Supt. Horticultural Station, Brooks
S. MOLNAR, B.Sc., P.Ag., Horticultural Station, Brooks
S. MAHADEVA, B.Sc., M.Sc., Ph.D., Horticultural Station, Brooks
MISS D. DOUGLAS, B.Sc., P.Ag., Horticultural Station, Brooks
T. KRAHN, B.Sc., P.Ag., Horticultural Station, Brooks
H. T. OOSTERHUIS, B.Sc., in Forestry, P.Ag., Edmonton
J. C. CHEDZOY, Supt., Oliver Tree Nursery

Horticulture Services

Alberta farmers planted 1,922,730 trees from the provincial nurseries at Oliver and Brooks. This is a decrease of 66,285 from 1966. The number of applicants receiving trees was 5,279, an increase of 327. The department, as part of the centennial program, supplied 98,270 trees to 478 organizations. Due to one of the latest springs on record the nurseries experienced serious difficulties in packing and shipping the trees.

Tree Nursery — Oliver

There were 1,878,260 trees supplied to farmers. In addition, 583,400 conifer seedlings were supplied to the Department of Lands and Forests. The number of trees shipped for forestry purposes was less than in 1966 because some of the stock was too small for field use. This resulted in nearly 600,000 conifer seedlings being transplanted at the nursery for future use. About 9,000 lilac and mountain ash were supplied to the Department of Youth for centennial purposes, and 1,035 balled and burlaped trees were used by provincial parks' officials to beautify their parks.

An inventory of trees at the end of 1967 included 6,459,435 conifer seedlings and 636,190 conifer transplants for the Department of Lands and Forests; 6,247,445 seedlings and 7,857,450 field grown seedlings and transplants for the Department of Agriculture plus 16,560 larger trees for use in provincial parks. The staff at the nursery had made 172,475 hardwood cuttings of willow and poplar at the end of the year. The total inventory of trees at the nursery is 21,389,550.

1967 was a fair tree seed year and the following quantities were collected: green ash 613 lb., Tartarian honeysuckle 75 lb., mayday 18 lb., Colorado spruce 54 lb. Other seed collected and still to be processed includes villosa lilac, hawthorn, dogwood, salt bush, white spruce, larch, lodgepole pine, douglas fir, bur oak, roses and basswood. Seed of the following was purchased: juniper, honeysuckle, scotch pine, bur oak and caragana.

The nursery staff consisted of five permanent employees and three hourly workmen on a year round basis. Part-time staff consisted of eighteen men and women for the growing season and fifty additional men for the shipping season. Patients of the Alberta Hospital, Oliver, were employed during the summer months and did a useful job.

One new shelterbelt of manchurian elm one-quarter mile long was planted. Three poplar windbreaks were removed because of disease. All missing trees in the windbreaks were replaced.

Eight organized groups (300 people) visited the nursery. Students of the Forestry School, Northern Alberta Institute of Technology, visited the nursery six times as part of their course of study. 562 farmers picked up their tree orders at the nursery and 560 farmers called to pick up their orders of large white spruce.

1,382 conifer seed beds were planted for the Department of Lands and Forests; 1,112 for the Department of Agriculture; and 112 were established for the Federal Department of Forestry and Rural Development.

The strawberry root weevil which has been a problem in past years appears to be under control since dieldrin has been used at 8 lb. per acre, applied to the soil before the seed beds are planted. 1,000 yards of peat moss were dug and hauled to the nursery and an additional 2,000 yards have been stacked at a farm near Namao for future use. Six lots of grass and legume seed were cleaned for the Department of Agriculture.

The following new equipment was purchased: an air compressor, a Massey diesel tractor, a Lilliston cultivator, a soil shredder, a panel truck and a chemical sprayer. The Department of Lands and Forests purchased a grading table and a microscope for the seed extraction plant. The nursery staff, in co-operation with the Department of Public Works, designed and built a de-winging machine, a cone shaker and a cone cleaner.

A new office was constructed and work is continuing on the completion of the seed extraction plant. All the nursery buildings were painted and gravel was applied to the parking lots and nursery roads.

1,949 bushels of white spruce cones were received for processing; these yielded 1,528 lb. of seed. 2,037 bushels of cones of lodgepole pine were received from the Department of Lands and Forests and 473 bushels from private companies. At the end of the year, 305 lb. of seed had been extracted from the pine and processing is continuing. A total of 2,541 lb. of conifer seed was shipped to the various forest divisions; 357 lb. to North West Pulp and Power; and 21 lb. to North Canadian Industries.

102,800 conifer seedlings in containers were grown and shipped to forest divisions. A new 40 foot portable greenhouse was purchased and erected at the nursery and will be used for container growing in 1968.

606,000 Colorado spruce were transplanted in the spring, also 353,000 white spruce, 30,000 lodgepole pine, 20,000 Scotch pine and 7,000 bristle cone pine. An additional 230,000 Colorado spruce were transplanted in August. In addition to those planted for the Department of Agriculture, 600,000 white spruce were transplanted for the Department of Lands and Forests.

795,000 hardwood cuttings of poplar and willow were lined out in the spring. Eight employees worked thirteen days to com-

plete the job. Because of disease problems and limited moisture, only 231,000 cuttings rooted and only 150,000 trees were dug. To assist in the control of *Cytospora* and *Septoria* diseases all poplar stooling beds were dug up, removed and destroyed. The staff at the nursery are removing all suspected diseased poplar in the vicinity of the nursery. This work will continue as time permits until all suspected trees are destroyed.

Trials with containers made of peat and plywood resins, to grow individual conifer seedlings, were carried out. This is a co-operative program between the nursery, Alberta Research Council and the Federal Forestry Service. Trials to evaluate the control of weeds by chemicals and to determine the value of various commercial fertilizers, were also established. An experiment to determine the most suitable temperature to store rooted deciduous trees has been started. A total of 36 various tests are being carried out at the nursery in co-operation with various provincial and federal agencies.

Fifty assorted varieties of trees were planted in pots for the use of His Honor the Lieutenant Governor for planting at various locations throughout the province. A number of large trees were sent to other provinces for centennial projects. Several hundred large trees were supplied for highway plantings.

497 seed beds were sown in the fall for the Department of Agriculture; these included white and Colorado spruce, lodgepole pine and Tartarian honeysuckle. 41 beds were planted for the Department of Lands and Forests as part of an experiment in fall seeding and mulching.

The Nursery Superintendent attended a meeting at Indian Head, Saskatchewan, of the Intermountain Nurserymen's Association. Three trips were made to Rocky Mountain House to assist forestry personnel establish and manage a container growing greenhouse there. One trip was made to Hinton to attend a meeting on tree fertilization. Several meetings were held with officials of the Department of Public Works regarding operation of the seed extraction plant and the design of the proposed cold storage plant.

Horticultural Advisory Committee

This committee representing the Research Stations of the Canada Department of Agriculture, the University of Alberta, the Plant Industry Division, and the commercial and amateur horticulture industry reported on research and other developments in horticulture to the Alberta Agricultural Co-ordinating Committee on December 14th.

Alberta Horticultural Association

The 15th annual meeting of the association was held in Lacombe on March 4th. The meeting was adjourned and completed at Olds in September. The executive met three times during the year. The 13th Provincial Horticulture Show was held in Calgary on August 25th and 26th. The association again sponsored a horticulture judging school held at the Olds Agricul-

tural and Vocational College in September, and for the second time sponsored a judging school at the Fairview Agricultural and Vocational College on July 25th and 26th. Three editions of the association's publication, "The Alberta Horticulturist", were issued. Mr. Lorne White of Calgary was re-elected President.

Potato Production Improvement Committee

This committee, appointed by the Horticultural Advisory Committee, is composed of commercial and seed potato growers from the major producing areas of the province together with provincial and federal Department of Agriculture personnel interested in the production and marketing of potatoes. It acts as an advisory committee to the Horticultural Advisory Committee. The committee met in Calgary on November 16th.

Tuber Indexing of Foundation Potato Seed

The service of indexing foundation potatoes was continued by the Plant Industry Division; the Horticultural Station, Brooks; and the Plant Protection Division of the Canada Department of Agriculture. Twenty-three growers took advantage of the program and submitted 5,045 tubers for testing. 2,623 tubers (52%) were rejected primarily because of mosaic virus disease. Tubers of the following varieties, Netted Gem, Warba, Norland, Chinook, and Sable were submitted by growers.

Seed Potato Production

The following is an eight-year summary of seed potato production in Alberta:

	1960	1961	1962	1963	1964	1965	1966	1967
No. of Growers	62	57	51	50	45	59	61	55
No. of Fields Inspected	253	249	190	182	174	237	223	290
Acres Inspected for Cert.	1,847	2,196	1,617	1,607	1,576	2,880	3,831	3,300
No. of Fields Rec. Cert.	223	158	179	160	152	207	213	262
Acres Passed for Cert.	1,547	1,442	1,415	1,475	1,271	2,552	3,266	3,016

Other Activities

The Head of the Horticulture Branch visited twenty-four District Agriculturists' areas and assisted with tree planting, landscaping and farmstead planning. Demonstrations were held on the pruning of fruit and ornamental trees. Information was provided to several hundred communities which planted trees and shrubs as centennial projects. The branch assisted the Department of Highways and the County of Leduc in planning and planting the first highway tree planting beautification project. He addressed nineteen public meetings and spoke at the 4-H Leaders' Conference and judged at two 4-H achievement days. Twenty-three trips were made to the Oliver Tree Nursery, four to the Crop Clinic and six to the University of Alberta to discuss horticultural matters of common interest. Two trips were made to the Peace River Block including the Fort Vermilion area to

address public meetings and assist at the second judging school at Fairview; and three to southern Alberta to attend vegetable growers meetings and also to discuss matters of common interest and concern with the staff of the Horticultural Station, Brooks. The Head of the Horticulture Branch is the department's representative on the Edmonton Regional Planning Commission and attended six regular monthly meetings and three executive meetings and two special meetings of the rural roads sub-committee. He is also the department's representative on the Provincial Planning Board and attended seven regular meetings and served as a member of the board on ten occasions to hear sub-division appeals. Several visits were made to the offices in Lethbridge, Calgary and Edmonton of the Canada Department of Agriculture Fruit and Vegetable Inspectors to discuss grading regulations and associated problems. The revised regulations under the Vegetable Sales (Alberta) Act were approved and are available to the trade and consumers. He acted as a judge at five local horticulture shows. He is a member of the executive of the Alberta Horticultural Association and serves as editor of that organization's quarterly publication, "The Alberta Horticulturist". Several interviews were given on the department's radio program, "Call of the Land." He also prepared and gave for the first time on the same program, twenty-three one-minute broadcasts on timely subjects. Three television appearances were made on Edmonton stations. Fourteen press releases were published in the department's weekly newsletter, "Farm Notes". Several hundred letters were written and telephone calls answered to provide horticulture information to the general public. Five meetings were held with officials of the Alberta Department of Lands and Forests regarding the operation and management of the Oliver Tree Nursery. He attended a two-day exercise at Penhold sponsored by the War Supplies Agency. He attended the annual three-day conference of the Western Canadian Society for Horticulture held in Banff. In company with two other members of the Plant Industry Division he visited California for eight days on a fresh vegetable fact finding mission.

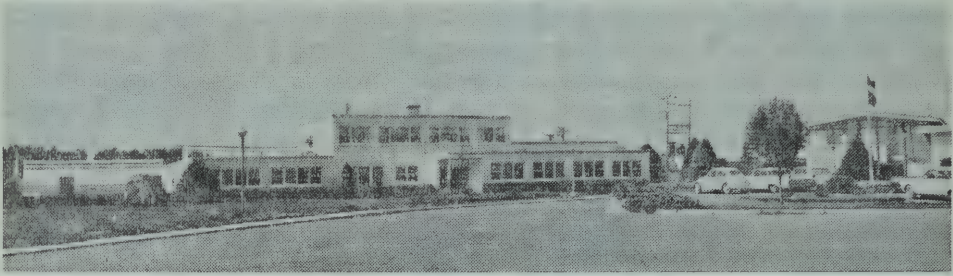
HORTICULTURAL STATION, BROOKS

Introduction

During the Centennial Year emphasis was placed on human relations. Meetings with people at the station and in their own surroundings played a major role. This was culminated with three field days in August. Future physical planning programs were instigated. Capital developments made good progress. Project results from applied investigations and research, in spite of a very late spring, were brought to satisfactory conclusions.

Capital Improvements and Maintenance

During the year additions were completed to the staff house, alterations were made to the administrative part of the office proper, and greenhouse No. 2 was moved to its new location. The main irrigation canal on the station was lined with plastic. The isolation station was fenced and five acres of the first levelled land were cropped. In bringing this area into production,



Horticultural Station Office and Laboratory with Staff House to the right. Centennial plaque is mounted on the large rock "Little Rundle" to the left of the photo.

modifications were made to the main irrigation supply system. Water application practices were improved by the replacement of the sprinkler system and the introduction of a limited quantity of gated pipe. Six sections of the pilot greenhouses were completed with the installation of heating and recording equipment. Light efficiency instruments for this project were supplied through the courtesy of the Alberta Research Council. With the help of the growers group the vegetable grading equipment was realigned. Additional units, purchased through their co-operative effort, were added to the vegetable receiving and grading units. Following the completion of the main ditch lining, road improvements were made to the station transportation system and re-gravelling of sections was accomplished.

Road maintenance on the station is made possible through the use of equipment of the Provincial Highways Department and the Town of Brooks. General painting and repairs were carried out by the staff. Surveying and long time planning for sewer services, roads and buildings were set in motion with the architects and engineers.

Equipment

During the year, additions to the mobile and heavy equipment made the staff more self sufficient with respect to the movement of help and the working of the land. Light delivery truck units, an additional tractor, a portable seeder, precision seeders, seed washers, discs and plows were added. Technical equipment was added to the food processing section of the laboratory.

Station Projects

Of the 58 station projects, 43 were active during the past year. These were divided among vegetables, ornamentals, fruits, and tree production. All sections have access to laboratory facilities. Herbicide and pesticide projects were assumed by each segment of the station work.

Vegetable projects encompassed trials in which 1,024 varieties of 44 kinds were screened and tested. Tomato breeding and selecting work was done amongst 14,707 plants which were divided amongst 518 selected lines. The station introduced tomato variety Red Bobs has been favorably received and is being used as breeding material in eastern Canada and the

southern United States. Four seedlings in the 1967 advanced trials were sent to other research stations for their evaluation. Progress has been made with the cabbage and pepper breeding programs. Castle pepper was prepared for introduction to the trade. Two experiments were combined with the potato tuber indexing program. The first dealt with a method of handling the eyes removed from the tuber for plant production and the second to test the media in which the eyes were best planted for even germination and development. The staff was heavily involved with the prairie regional section of the National Potato Trial. Co-operative trials with spices for the production of seasonings were undertaken for the first year.

Ornamental horticulture involves the largest portion of the station staff. This is due to the production of deciduous plant materials for farm distribution. As part of this particular project, 306,000 poplars and willows are grown for shipment to the Oliver Tree Nursery. Fifty-seven thousand plants were grown from seed and shipped for hedging material, 4-H bundles, and fruit bundles. Super-imposed on this work were cultural programs with respect to the most suitable methods of production of hard and soft wood cuttings and the germination of tree seed. Zero storage of cuttings, fall planting seed, and early spring seeding have improved tree stands.

The six sectioned greenhouse built to study covering materials and heating costs was completed. These houses were designed and constructed by the station staff with the co-operation of the Department of Public Works engineers, the greenhouse industry, and the businesses servicing this industry. The first crop was planted in August and had passed its peak of production by the middle of December. The Kilduff gladiolus collection included some 15,000 corms consisting of 1,335 varieties. They include a library of old, or museum varieties, and the top fifty gladioli in the trade.

Fruit work at the station was involved with the breeding and testing of apples, apricots, plums, cherries, pears, small fruits and rhubarb. Rootstocks, herbicides and cultural practices were also investigated. Work with raspberries, over the past eight years, was formally presented to the annual meeting of the Canadian Society for Horticultural Science. Four more apple selections were accepted for further testing by the Prairie Co-operative Fruit Committee.

A number of growers, with assistance from the station and the Special Crops Supervisor, produced, processed and marketed crops of fresh vegetables. Marketing responsibilities were particularly emphasized. Growers are now sufficiently experienced to establish an independent enterprise. The one hundred ton pilot pressure cooled controlled temperature storage adequately handled its second crop of fresh vegetables. Exposed wall insulation has not proved completely satisfactory in this structure due to the high relative humidity of the storage area. Progress continued on the use of outside air for cooling purposes. The mechanics of exhausting high humidity air during periods of extremely low temperatures has not been overcome. The pilot plantings of hot and banana type pickling peppers and silver

skin onions demonstrated the contractural feasibility of these crops. The first pilot study of rutabaga storage involved the use of facilities and personnel during the first four months of the year. This proved a commercially feasible undertaking and plans were made to progress further with it.

Education

Arrangements for, and direction of, special station programs to inform people about the work at the station were handled by the station hostess, Miss Beverly McKay. There were over 1,200 casual visitors to the station and more than 1,200 were present at the 14 organized field and visitor days. An effort was made to give all visitors an opportunity to become acquainted with the segments of the station work in which they were interested. The peak of this work was reached on the days sponsored by the Alberta Potato Growers, the Commercial Vegetable Growers, and the Alberta Horticultural Association. The latter was open to all interested in general horticulture and was the centennial project of the Alberta Horticultural Association. Chaired by Mr. Lorne White, President of the Alberta Horticultural Association, the dedication ceremony of a future hall and library unveiled a plaque — "Dedicated by the Alberta Horticultural Association in Canada's Centennial in recognition of the work of this Station for the people of Alberta, August 27, 1967". Invocation at the ceremony was conducted by the Rev. C. J. Ramer of Duchess, and Mr. Harvey Allen, Horticulturist at the Canada Research Station, Lacombe, was guest speaker. The unveiling was performed by Mr. Fred Madeville, M.L.A. Bow Valley — Empress. The plaque was mounted on "Little Rundle" a giant igneous granite field stone weighing some 17,780 pounds. This rock was uncovered during the construction of the irrigation district canals 53 years ago at which time it is recorded it took 8 horses and five men two days to remove it from the path of the canal. The rock's original location was on Section 33, Twp. 18, Rge. 15, W. 4th, near the east branch canal of the irrigation district. This land was a part of the Perry Minor ranch. The rock was moved from its original location to its new site at the Horticultural Station by equipment supplied by the County of Newell.

Assistance was given to committees of the Canadian Horticultural Council with respect to standard container grades for cucumbers and the flower transportation committee in association with the Alberta section of Flowers Canada. Professional and technical staff assisted with lectures, short courses and field days on 163 occasions. These were associated with the flower, vegetable, potato, and processing industries as well as agricultural short courses and landscaping schools.

Appreciation

The efforts and co-operation of the professional and technical staff of the Department of Public Works has been most valuable during the past year. Access to, and the use of, research equipment from the National Defence Research Station, Ralston, and the Canada Research Station, Lethbridge, has proved most useful. For the first time we have had the support and guidance of the

Station Advisory Committee. Assistance from people in industry, at research institutions and from universities has been generously given. To all of these people the station and its staff has been most grateful. Assistance given by the officers of the County of Newell, the Town of Brooks, and the Eastern Irrigation District has helped greatly in making the year's work on the station satisfactory.

Staff

During late August Dr. S. Mahadeva assumed responsibilities in the field of pomology. This gave the station a complement of professional staff in the fields of ornamental horticulture, vegetable culture, pomology, and special crops. Three technical appointments were filled by graduates from the Olds Agricultural and Vocational College. Mr. Leslie Ablonczy was granted educational leave and his position was temporarily filled by Mrs. L. Krahn, B.Sc. Three of the senior technician staff, Mr. Brooks, Mr. Gauggel and Mr. Reesor took the preliminary examination for the Canadian Diploma in Horticulture. Members of the staff participated in meetings of the Western Canadian Society for Horticulture, the Agricultural Institute of Canada and its associated Canadian Society for Horticultural Science, the P.F.R.A., a tree handling seminar, and the Canadian Horticultural Council. Miss D. L. Douglas was on loan to the Olds Agricultural and Vocational College during the first quarter of the year.

During the year the Superintendent of the station was honored by the presentation of the Alberta Horticultural Association's Centennial Gold Medal for contributions in the field of horticulture and by presentation of a Canadian Centennial Medal. He was also made Honorary Life Member of the Brooks Chamber of Commerce and a life member of the Alberta Vegetable Growers Association.

SPECIAL CROPS

T. KRAHN, Supervisor

Acreage of Special Crops in Alberta

	1967
Onions	200
Corn (fresh only)	400
Carrots (fresh only)	325
Rutabaga	400
Cucumber	300
Cabbage	300
Potatoes	19,000

Onions

The decrease in onion acreage was due to the late wet spring experienced; early seeding was almost impossible. Most of the crop was grown in the Medicine Hat, Brooks and Taber areas. Yields were down due to poor sizing. Maggot and weed control continue to be serious problems in onion production. No herbicide to date has proven entirely satisfactory and maggot population continued to increase.

Corn

The late spring resulted in a late seeding, but the hot weather during the summer brought the corn rapidly to maturity and harvesting was as early as 1966. Bulk of the corn was grown in the Medicine Hat - Taber areas. Medicine Hat hydro-cooled most of their corn, but Taber continued to put hot corn on the market. Red-Hat Co-operative at Medicine Hat did a very fine job of marketing corn from that area.

Carrots

Carrots have become a prime horticultural crop in Alberta. Excellent quality and grower co-operation have made marketing much easier. Growers have obtained a large amount of knowledge about this crop; however, the need for proper timing of irrigation was very evident in certain fields, while a few fields showed deficiencies of nitrogen.

Prices showed a steady increase from the beginning of the marketing season.

Rutabaga

This crop is becoming economically important. The southern irrigated areas and the Edmonton area are the two main production areas. The entire crop in the Edmonton area was lost due to cabbage maggot damage. There was evidence of some damage in the south also. Proper storage, under high humidity, allows rutabaga to be held into early spring when demand is usually stronger.

Potatoes

Alberta potatoes again won all the prizes at the Toronto Royal Winter Fair. Tona Ohama of Rainier won the seed class and cooking class. Ohama Bros. won the table stock class.

A potato chip factory was established at Brooks. Their product is marketed under the "Tona Golden Top" label.

A central packing shed is being built in Edmonton, and a shed for Brooks is on the drawing board. The plant at Brooks will also pack fresh vegetables extensively.

The Alberta Elite Seed Potato Growers Association was active in the establishment of a more progressive potato seed industry in the province.

Processing Crops

Acreages of canning crops were down slightly from a year ago. The yields of crops were average or above and quality at harvest was good. The highlight probably was the excellent green bean crop. Mobile vining equipment for peas was increased considerably this year.

Bicks of Canada had difficulty in obtaining contract cucumber acreage; consequently many cucumbers were imported from Michigan to operate the Medicine Hat plant. Grower relations were somewhat strained.

Greenhouse Crops

The greenhouse production of vegetables, cucumbers and tomatoes, continues to increase at Medicine Hat. This is particularly due to the efforts of Red-Hat Co-operative in marketing these products.

Other Activities

The pilot plant project was continued. Trials were slanted towards the pickling industry this year, with three varieties of pickling cucumbers, peppers and pickling onions being grown. Also two varieties of squash were grown and they will be marketed.

Horticultural Station equipment and facilities were used by the Eastern Irrigation District Vegetable Growers Co-operative on a ton-month rental basis. Carrots and rutabaga were the main crops grown. The Special Crops Supervisor acted only in an advisory capacity to this operation.

Numerous meetings were attended, many of them with the purpose of broadening his horticultural knowledge. Several growers meetings and field days were addressed.

An active part was taken in promoting and co-ordinating Alberta's Vegetable Industry through work with the Alberta Fresh Vegetable Growers Association.

A vegetable growers newsletter was published on a regular basis throughout the growing season in an effort to keep growers informed of market and price conditions, and in an effort to unify Alberta's vegetable industry.

The Special Crops Supervisor toured the vegetable growing area of California, as a part of a tour sponsored by the University of California.

Numerous enquiries were answered through telephone and mail services.

REPORT OF THE PROGRAM DEVELOPMENT DIVISION

1967

C. J. McANDREWS, B.Sc., M.Ag., P.Ag., Director

Agricultural Products Marketing Council

D. H. McCALLUM, B.S.A., P.Ag., Chairman

C. H. FERRIES, B.S.A., M.S., P.Ag., Secretary

Resource Conservation and Utilization Branch

H. W. THIESSEN, B.Sc., M.Ag., P.Ag., Branch Head

Municipal Agricultural Programs Branch

J. R. GYLANDER, B.Sc., P.Ag., Branch Head

A.R.D.A. Branch: Agricultural Rural Development Administration**Edmonton Office:**

G. R. STERLING, B.Sc., M.Sc., P.Ag., Branch Head

E. B. NAGLE, Liaison and Public Information Officer

S. M. SCOTT, B.Sc., Canada Land Inventory Co-ordinator

Edson Office:

A. F. BELYEA, B.Sc., M.Sc., P.Ag., Regional Resource Co-ordinator

P. J. SHEEHAN, Mrs. B.Sc., Assistant Regional Resource Co-ordinator

W. J. EDGAR, B.Sc., P.Ag., Acting Farm Adjustment Specialist

L. O. BOSSERT, Community Advisor

R. C. ACORN, Mrs., Community Advisor

S. E. MEYERS, Miss, B.Sc., B.H.Ec., Home Development Agent

M. H. HALDER, "Sister", B.Sc., Home Development Agent

St. Paul Office:

L. GAREAU, B.S.A., M.Sc., P.Ag., Regional Resource Co-ordinator

E. R. ZAWADIUK, Miss B.Sc., Assistant Regional Resource Co-ordinator

Fairview Office:

F. GRAVES, B.Sc., M.Sc., P.Ag., Regional Resource Co-ordinator

REPORT OF THE DIRECTOR

The Program Development Division functioned within the same general terms of reference during 1967 as were outlined in the last annual report. The branches and agencies of the Division are identified with their program reports. Numerous terminal assignments were administered by the Director's office. They were inter-departmental and essentially of service to the Deputy Minister's office.

Irrigation

The Irrigation Policy Committee drafted and submitted policy recommendations to the Minister. Copies were issued to the public, and meetings were held to discuss the recommendations. The Provincial Auditor agreed to prepare a uniform accounting system for use by irrigation districts. The policy recommendations

were presented to the Irrigation Cabinet Committee to clarify and confirm procedures for drafting new legislation to consolidate and replace existing acts and incorporate the recommendations. Mr. W. S. Russell, Q.C., of Lethbridge, was retained to draft the bill.

Lethbridge Northern Irrigation District

The last of the Colonization Manager's property was transferred to the L.N.I.D. during 1967. Land settlement business was completed in 1961.

Financial assistance by way of loans to water users was limited to sugar beet labour and hauling costs. The total loaned during 1967 was \$126,000 as compared to \$155,600 in 1966 and \$190,000 in 1965. The district bore the expense of this service. The money used was borrowed from the Treasury Branch in Lethbridge.

The shortage of qualified labour on farm units and a late spring season had a direct effect on the reduction of sugar beet acreage. The sugar beet acreage was 7,558, down 1,227 acres from 1966. The tonnage harvested was 95,265, down by 31,610 tons from 1966.

An honour to the district in the Centennial Year was the award of Master Farm Family to Mr. W. V. Boras and family.

The Official Trustee was capably assisted by the Advisory Committee as elected by the water users. The committee consisted of T. C. Noble, Chairman; A. Hann; L. E. Buckwell¹; R. Jensen; W. V. Boras.

The Advisory Committee accepted a strong role in steering the administration and operative functions of the district into sound, progressive activities within a framework of economic feasibility. The Official Trustee thus recommended to the water users and the Honourable Minister of Agriculture that serious consideration be given to establishing a "Board of Trustees".

The Lethbridge Northern Irrigation District received study reports necessary to plan replacement of works, and the construction of betterments including drainage to assure the water supply and conservation and reclamation of land throughout the project. Implementation of the plan was underway, and considerable acceleration of the plan was under consideration at the year's end.

United Irrigation District

The Official Trustee and the Water Users' Advisory Committee entered into negotiation with the Prairie Farm Rehabilitation Administration to commute the payment of water service charges on the change of irrigable acreage affected by P.F.R.A. construction of a canal through the district to link the Waterton Reservoir to the Belly River and the St. Mary River Irrigation system.

Plans for the replacement with betterment of some of the district's canals and structures was considered. Reconstruction

¹Member of the Legislative Assembly to represent the Macleod Constituency.

of the Cochrane Lake chute was implemented. The need for improvements to the project was reported by a P.F.R.A. engineering study. The equipment, personnel and materials for such work indicated the need for increased water service rates.

The Colonization administration completed all land settlement transactions in 1966.

Macleod Irrigation District

This district was non-operative. Thus, the functions of the Official Trustee were minimal. The M.I.D.'s account was transferred from the Canadian Imperial Bank of Commerce in Fort Macleod to its Lethbridge branch and Miss B. Beasley of the Water Resources Division was appointed as Secretary-Treasurer.

Water

Literature research and planning on public administration, institutional organization, and constitutional and statutory structures as they relate to water were carried out as a continuing development of recommendations on the administration of water in Alberta.

Pollution

Papers prepared for the Canadian Resources Ministers' Conference in Montreal in 1966, and for the Water Studies Institute in Saskatoon were published. One paper was also revised for a text for publication by the University of Waterloo. The Director was named a member of the Alberta Pollution Advisory Committee.

Special Projects

Classification, Reorganization and Regionalization.

The Director met with P.A.O. Classification Officers and initiated review of the Department of Agriculture reorganization. Functional reorganization and regionalization plans were submitted to divisions for study. Positions were noted where there was a need for reclassification and new job descriptions were prepared where changes were necessary. Completed classification reports and charts on the positions of professional personnel were supplied to P.A.O., the Deputy Minister and Division Directors. A staff chart of the entire Department of Agriculture was drafted and distributed to department officials.

Department Objective and Program Budgeting.

Each Branch prepared statements on basic objectives, program activities and costs from which initial steps to program budgeting were taken.

Alberta Agricultural Research Trust Grants Committee.

The Grants Committee met twice to study and rate research projects of the University of Alberta, Faculty of Agriculture, and recommend funds for their support.

Branch Activities

The Director's function in branch programs as reported

in the following sections, involved policy interpretation, management of the decision-making process, and contributions to planning.

MUNICIPAL AGRICULTURAL PROGRAMS BRANCH

The Municipal Agricultural Programs Branch was established during the year with the appointment of J. R. Gylander as branch head effective April 1, 1967.

The objectives of this branch are related to the Agricultural Service Board Act and are to develop and implement agricultural programs of mutual concern and interest to the department and municipal governments; and to improve departmental communication with municipal governments at both the provincial and local level to strengthen relationships in areas of mutual responsibility.

Activities during the year were mainly concerned with reviewing present programs; establishing lines of communication with municipal authorities; discussions with all divisions of the department with the view to consolidating all department programs into one agreement; and to assisting counties and municipal districts in the establishment and use of Agricultural Advisory Committees.

This office participated in eight Agricultural Service Board meetings, three advisory meetings, four regional Agricultural Service Board conferences, the annual Agricultural Service Board conference at Banff, the annual convention of the Alberta Association of Municipal Districts, and several meetings with the provincial executive of the Alberta Association of Municipal Districts.

Four divisions have programs involving grant or cost sharing arrangements with municipal governments. These are Plant Industry, Veterinary Services, Animal Industry and Water Resources.

There are now 57 Agricultural Service Boards in operations, comprised of 27 counties, 20 municipal districts, 19 improvement districts and 2 special areas. This number includes the newly established Agricultural Service Board in Improvement District No. 102.

AGRICULTURAL PRODUCTS MARKETING COUNCIL

Members of the Council are D. H. McCallum (Chairman), C. J. McAndrews (Vice Chairman), C. H. Ferries (Secretary), and Members R. H. McMillan, K. Williams (producer representative) and L. P. Bromham (industry representative).

MAIN ACTIVITIES

Upon the recommendation of the Marketing Council several amendments were made to the Marketing of Agricultural Products Act. Included was a new section providing for appeals by producers of a regulated product to the respective board or commis-

sion and to the Marketing Council. A section was also added that granted authority to representatives of boards, commissions or the Council to inspect premises and books of producers and those engaged in the marketing of the regulated product, but only up to that point at which the value of the product to the producer had been determined. Powers available to commissions were broadened to provide them with some additional authority that experience had indicated was necessary.

Plans that have been established under the Marketing of Agriculture Products Act were as follows:

- (a) The Alberta Potato Commission, established in 1966, appeared to have a successful year.
- (b) The Alberta Broiler Growers' Marketing Board, established in 1966, operated until November of 1967 as a provisional board of five growers who had been appointed by the Marketing Council. At that time the first annual meeting of the registered broiler growers was held and they elected their own board, the majority of whom served on the provisional board. The functions of the board were conducted in a satisfactory manner and from opinions expressed at the annual meeting the board has proven to be a real factor in stabilizing prices to growers.
- (c) The Alberta Turkey Growers' Marketing Board, established late in 1966, did not become operational until March 1967. It did not intend to use its authority to set prices, but this became necessary owing to pressure of supplies from the U.S.A. In fact, turkey prices across Canada were affected to such an extent that the Provinces made representation to the Federal Department of Agriculture for an embargo on U.S. turkeys entering Canada.
- (d) The Alberta Vegetable Marketing Board, established in 1958, had a wide range of powers under the 1955 Act. Owing to major amendments to the Act in 1965, the board was requested to revise their plan and regulations to conform with these amendments, but this has not been completed in a manner satisfactory to the Marketing Council.

For the past year the Council has worked very closely with groups that wish to have marketing plans established under the Act. They are as follows:

- (a) Commercial Egg Producers' Association. This group wanted to establish a producer board for the purpose of reducing the wide fluctuations in prices producers receive for eggs. Details concerning its establishment have been worked out and Council will be forwarding their recommendations to the Minister of Agriculture early in 1968.
- (b) Swine and Farm Organizations. These various groups have been trying to draft a plan for the marketing of

hogs, but have been unable to agree to one particular plan. Since plans of various types have been under discussion for two years, and since there has been considerable agitation for improvement in hog marketing, approval has been given for the Council to seek an expression of opinion from hog producers throughout Alberta as to which particular plan they favour, or if they wish no change in the present system. A poll will be conducted early in 1968, and the results will guide the Council's recommendations to the Minister of Agriculture.

- (c) **Western Stock Growers' Association.** This group has requested an amendment to the Marketing of Agricultural Products Act, that would include cattle, sheep and wool as agricultural products that could be regulated, controlled or promoted pursuant to this Act. The Association has expressed interest in the establishment of a commission to collect fees for research and promotion.

The Marketing Council held twelve formal meetings during 1967 as well as numerous meetings with representatives of various commodity, farm and industry organizations.

RESOURCE CONSERVATION AND UTILIZATION BRANCH

Conservation and Utilization Committee

The committee membership remained as established November 28th, 1966. Although the committee as a whole met only once during 1967, numerous meetings were held with members of the committee and their related staff on the subjects of land assembly, farm adjustment and consolidation, and land improvement and conservation.

Provincial Grazing Reserve Program

The development phase was transferred to the Lands Division, Department of Lands and Forests effective March 31st, 1967. The purchase of lands for grazing reserves remained the responsibility of this branch. In addition, this branch was represented on a technical panel controlling the development and operation of grazing reserves, and the development of community pastures.

Grazing Associations

Fencing loans were made to the following grazing associations in the respective amount: Campbell Creek Grazing Association, \$960.00.

Demonstration Plots

The administration of these plots was transferred to the Plant Industry Division.

Land Assembly Program

Table 1 indicates the various purchases made during the calendar year. This program is meeting the need of various

agencies of government for the purchase of lands required for the effective conservation and efficient utilization of land, forest, water and wildlife resources of the province. Upon purchase, title is transferred to the Minister of Lands and Forests, although the requesting agency maintains a reservation regarding the future use and disposition of the land.

TABLE 1

Purpose of Purchase	No. of Parcels	Cost
Farm and Woodlot Adjustment	16	\$ 22,345.00
Grazing Reserve Assembly ¹	90	231,952.98
Forestry Assembly	11	30,941.15
Watershed Conservation	13	24,132.50
Community Pasture	18	65,100.00
Recreation Assembly	1	600.00
Wildlife Conservation	4	5,040.00
Indeterminate Use ²	13	19,375.00
	<u>166</u>	<u>399,486.63</u>

Farm Adjustment and Consolidation Program

Activity related to this program has been limited primarily to Census Division 14. It is, however, anticipated that it will be extended to Census Division 12 early in 1968.

Table 2 indicates the scope of activity during 1967.

TABLE 2

Location	Farms	Acres	Cost
Yellow Area	18	4909	\$184,163.99
Green Area ³	7	1742	72,329.61
Totals	<u>25</u>	<u>6651</u>	<u>\$256,493.60</u>

¹Includes tax recovery lands purchased for soil conservation reasons and administered by the Lands Division as grazing leases.

²Includes tax recovery lands and marginal patented lands purchased for conservation reasons but for which the final use has not yet been established. Some will ultimately be used for recreation or forestry assembly.

³These lands are reserved for forestry assembly and consequently are withdrawn from permanent agriculture.

A Rural Development Advisory Committee comprised of the following members was appointed by the Hon. H. E. Strom in order that the respective government agencies could receive local recommendations regarding this program and related rural development programs in Census Division 14.

A. Frank Belyea, Edson; Committee Chairman, Department of Agriculture
 Walter S. Morrison, Evansburg; Department of Agriculture
 Thomas H. Askin, Edmonton; Department of Lands and Forests
 Stanley J. McArthur, Evansburg; Department of Municipal Affairs
 Richard E. Pritchard Jr., Blue Ridge; Farmer
 George Monsma, Peers; Farmer
 Mike Hotra, Evansburg; Farmer
 Nick Miluch, Rosevear; Farmer

The committee meets biweekly and makes recommendations through this branch to the Departments of Agriculture, Lands and Forests, Municipal Affairs and other Departments.

Land Improvement and Consolidation Program

Negotiations continued in the development of adequate regulations controlling the clearing of lands in order that their multiple use is encouraged. In addition, the financing of the program is being negotiated between the Provincial Government and the existing lending institutions. It is anticipated that the program, providing for interest free, deferred repayment, guaranteed development loans will become operative in 1968 on a regional basis.

Amendments to the existing legislation, The Utilization of Lands and Forests Act, Ch. 354, R.S.A. 1955 will be submitted to the 1968 sitting of the Legislative Assembly so the program can be ratified and implemented.

The Saddle Lake Indian Reserve development project will be the first under this program. It contemplates the clearing of 3,000 acres during 1968 for agricultural production.

General

The Branch Head was appointed to the following committees during 1967:

Homestead Lease Loan Board — Lands Division, Department of Lands and Forests.

Interpretive Soil Classification Committee — Alberta Soil Survey.

AGRICULTURAL & RURAL DEVELOPMENT ADMINISTRATION

The Head of the ARDA Branch continued co-ordination of development programs by attending 53 co-ordination meetings with various provincial and federal government agencies in the province. For example meetings were held with Department of Indian Affairs, Canada Manpower, Department of Youth, Department of Public Welfare, Indian Association, and others. He also attended and chaired 11 ARDA Advisory Committee meetings, and acted as Secretary-Member for eight ARDA Co-ordinating Committee meetings.

The Head of the ARDA Branch, along with the Public Information Officer, attended some 36 Chamber of Commerce meetings throughout Alberta where ARDA information was given out. He also spoke at four other public gatherings later in the year.

The staff in the Edson office increased considerably during 1967. Two Community Advisors, two Home Development Agents, and a Land Use Specialist were added to the staff. The Home Visitors' Program, which was barely started in 1966, was expanded both at Hinton and Edson. The Home Development Agents spent considerable time on this program, which is the first of its kind in Canada. A comprehensive plan, which was approved provincially, was developed for Census Division 14. At the close of the year it had not been approved federally.

Mr. Frank Graves was appointed as Regional Resource Co-ordinator in Census Division 15, with headquarters at Fairview.

ARDA Advisory Committee

The members of the ARDA Advisory Committee remained the same as reported in the 1966 Annual Report except that Mr. Merv Jaque, Department of Youth, was added, and Mrs. Thelma Scambler replaced Mr. J. R. Smith as the Department of Public Welfare representative.

ARDA Co-ordinating Committee

Members of this committee remained the same except that Mr. Richard Martland replaced Mr. J. E. Oberholtzer as the Department of Industry & Development representative, and Mr. D. W. Rogers, Department of Public Welfare, and Mr. C. J. McAndrews, Department of Agriculture, were added to the committee.

Alberta ARDA JOINT ADVISORY COMMITTEE

This committee, consisting of Dr. E. E. Ballantyne, Chairman, Mr. A. W. Morrison, Member, Mr. G. R. Sterling, Secretary, and Dr. A. Saumier and Mr. L. E. Pratt of Federal ARDA, met twice during the year with others who were asked to participate to discuss ARDA programs and to make future plans.

Detailed reports of the programs in Census Divisions 14, 12 and 15, along with the report from the Public Information Officer and the Canada Land Inventory Co-ordinator follow the descriptions of individual projects.

The following is a brief summary of the projects handled by the ARDA Advisory Committee, ARDA Co-ordinating Committee, Provincial Cabinet, and Federal ARDA:

Project 1/67 - Factors Associated with Managerial Ability in Localities of Various Stages of Economic Development

The purpose of this project was to identify and measure the managerial ability amongst certain groups of farmers in Alberta. After this was done, it was hoped the study would evaluate the farm management extension work and ultimately either verify it or change it. This project at the end of the year was with Cabinet.

Project 2/67 - Irrigation Design Criteria Efficiency and its Application to Irrigated Pasture Management on a Community Grazing System.

The purpose of this project was to determine irrigation efficiency and pasture management efficiency on large scale irrigated pastures. This project was approved.

Project 3/67 - Seven Persons Grazing Reserve

The purpose of this project was to increase the size and carrying capacity of the Seven Persons Grazing Reserve. This reserve was completed under Project No. 9002. This project was approved.

Project 4/67 - Woodlot, Watershed Survey

This project called for a forestry extension person to work in the counties of Lacombe, Wetaskiwin and Ponoka. It is a continuation of an older project where work was first started in the counties of Lacombe and Wetaskiwin. This project was approved.

Project 5/67 - Supplement to Project 28016 "An Economic Analysis of a Selected Small Farm Area in the Peace River Area - Alberta"

This project was a supplement to Project 28016 and involved a study of local residents in the Tangent area. This project was approved.

Project 6/67 - A Feasibility Study of the Medicine Valley Land Reclamation Project

This project was submitted by local people who wish to drain low lying land in the Medicine Valley. This project was tabled by the ARDA Advisory Committee and later in the year was incorporated into Projects 17/67 and 18/67.

Project 7/67 - Saddle Lake Resource Development

This project was submitted by the Saddle Lake Centennial Committee, and involves the clearing and development of 15,000 acres for farming purposes. It was approved under Section 11 of the agreement, and all of the expenditure will be recoverable from Federal ARDA. This project originated with, and will be operated by the Indians themselves. This project was approved.

Project 8/67 - Keg River Metis Colony Community Pasture

The purpose of this project was to develop grazing for approximately 800 head of cattle on the Keg River Metis Colony. The project was approved.

Project 9/67 - Vilna Recreational and Development Program

This project was submitted by the people of the district of Vilna and was to have been administered by the Vilna Golf Club. The purpose of the project was to improve the golf facilities and the facilities of the Bonnie Lake Beach recreational area. This project was discussed several times by the ARDA Advisory Committee, and rejected because funds were available through the Department of Youth.

Project 10/67 - Completing the Mapping of Present Land Use in the Settled and Fringe Areas of Alberta

This project was a renewal of Project 48005 and involves the mapping of present land use in the province. This was approved.

Project 11/67 - Lesser Slave Lake Flood Control

This project was a study of the floor areas surrounding Lesser Slave Lake. This project was approved.

Project 12/67 - Supplement to Project 28026 "A Study of a Developed Irrigation District"

This project covered the cost of printing eight volumes of different irrigation studies done in the various irrigation districts of Alberta. This project was approved provincially and transferred to Project 21/67 for federal approval.

Project 13/67 - Forest Establishment and Improvement

This project involved the establishment and improvement of forests in C.D. 14. It was approved provincially, and on mutual agreement between the provincial and federal governments was included in the comprehensive plan for C.D. 14 which at the close of the year awaited federal approval.

Project 14/67 - The Water Control Assistance Program

This was a Water Resources project, which was later split into two and rewritten as Projects 17/67 and 18/67.

Project 15/67 - Water Capability for Sport Fish

The purpose of this project was to assess the capability of lakes in Alberta to produce sport fish. This project was approved.

Project 16/67 - Forest Access

This project involved the construction of access roads in C.D. 14 for forestry purposes. This project was incorporated into the comprehensive plan for C.D. 14.

Project 17/67 - Preliminary Investigations, Studies and Surveys for the Alberta Water Control Assistance Program

This project involves investigations, studies, and surveys for design and layout of works associated with drainage, flood control, farm and rural water supply, small scale irrigation, etc. It was approved provincially but at the close of the year was awaiting federal approval.

Project 18/67 - Alberta Water Control Assistance Program

This project, closely related to Project 17/67, was intended to assist with providing the physical works needed for water development and control projects. It was approved provincially, but at the close of the year was awaiting federal approval.

Project 19/67 - National Wildlife Land Capability Study (1967-68)

This project was a renewal of the national wildlife sector of the Canada Land Inventory. It was approved.

Project 20/ 67 - Projects under Section 30, 1967-68 & Project 23/67 - Lions Tourist Camp Site

This project, under Section 30 of the Agreement, allows for expenditure of up to \$6.00 per family for small projects without further federal approval in the rural development area. This project gave the province the authority to handle small projects

such as aeration of Millers Lake and the Lions Tourist Camp Site at Edson. The project was approved.

Project 23/67 was approved under Section 30.

Project 21/67 - Public Information Services

This was a project to provide public information services regarding ARDA programs in Alberta. This project was approved.

Project 22/67 - Land Clearing Project - Tangent Area:

This was a land clearing project proposed by the people of Tangent after considerable effort and study on their part. The project was tabled by the ARDA Advisory Committee until a similar policy could be initiated in C.D. 14.

Project 24/67 - Iron River Community Centre

This was a project submitted by the Iron River Community Centre and called for improvement of their community hall. This was rejected by the ARDA Advisory Committee because funds were available through recreational grants under the Department of Youth.

Project 25/67 - Edson Aquifer Testing Program

This project involved engineering research on the Edson aquifer. It was later incorporated into the comprehensive plan for C.D. 14.

Project 26/67 - Rural Study Groups on Rural Sociology and Rural Economics

This project was submitted by the Farmers' Union and Co-operative Development Association and involved rural sociology and economic study groups. The project was approved.

Project 27/67 - ARDA Involvement in Alberta Outdoor Recreation

This project was prepared by several groups involved with recreation in Alberta, and was an attempt to provide co-ordination of recreational activities. The project was tabled by the Advisory Committee and was to be forwarded to a Recreational Committee planned by Provincial Cabinet but not finalized at the close of the year.

Project 28/67 - Canada Land Inventory Co-ordinator, Alberta Supplement to 48008

The purpose of this project as an amendment to Project 48008, was to provide further supplies and materials for the Canada Land Inventory Co-ordinator. This project was awaiting Provincial Cabinet approval at the close of the year.

Project 29/67 - Farm Adjustment and Consolidation in C.D. 12

This project was tabled by the ARDA Advisory Committee until more experience could be gained in this type of work in C.D. 14.

Project 30/67 - Morley Indian Reserve Recreation Study

The project was approved by the Advisory Committee, revised, and temporarily tabled by the Co-ordinating Committee. At the close of the year we were awaiting comments from the Parks Division of the Department of Lands and Forests.

Project 31/67 - Soil Capability for Agriculture in Alberta, 1968-69

This was a renewal for the fiscal year 1968-69 of the Soil Capability for Agriculture sector of the Canada Land Inventory. The project was awaiting Cabinet approval at the close of the year.

Project 32/67 - The Alberta Recreational Land Inventory. An Assessment of Land Suitability for Recreational Use in Alberta. Phase IV.

This was a renewal of the Alberta Recreational Sector of the Canada Land Inventory for the fiscal year 1968-69. This project was awaiting Cabinet approval at the close of the year.

Project 33/67 - National Wildlife Land Capability Study

This project was a renewal of the National Wildlife and Capability sector of the Canada Land Inventory for the fiscal year 1968-69. It was awaiting Cabinet approval at the close of the year.

Project 34/67 - An Inventory of Soil Capability for Forest Production in the Province of Alberta

This was a renewal for the fiscal year 1968-69 of Project 48012, which was to provide data and information regarding the green-yellow line of the province. It was awaiting Cabinet approval at the close of the year.

Project 35/67 - Little Buffalo Lake Farming Co-operative, Beef Cattle Grazing Project

This project was submitted from C.D. 15, and involved a beef cattle grazing project near Little Buffalo Lake. The project was thoroughly discussed by the Advisory and Co-ordinating Committees. During the discussions, it was brought out that the Metis in this area did not have legal right to the land they were requesting development on. The Advisory and Co-ordinating Committees prepared and forwarded a letter to Cabinet requesting a decision as to whether or not more Metis colonies should be established and also where they should be established.

Project 36/67 & 37/67 - Youth Potential Development (I) & (II)

Project 36/67 involved the placement of Department of Youth representatives at various points throughout the rural development area, and 37/67 involved the placement of a similar person on the Gleichen Indian Reserve. These two projects were approved by the Advisory Committee and invoked considerable discussion at the Co-ordinating Committee meeting. As a result of this discussion, the Co-ordinating Committee prepared and forwarded to the Human Resource Development Authority a letter outlining the duplication problem existing within several governmental agencies and other agencies outside the government. No decision was reached at the close of the year.

Project 38/67 - Groundwater Data Processing

This covers a renewal of a previous project involving the collection and compilation of basic groundwater data throughout Alberta. This project was approved by the Advisory Com-

mittee and was awaiting submission to the Co-ordinating Committee at the close of the year.

Project 39/67 - Groundwater Research and Observation Well Network in the Saskatchewan River Headwaters

This is another renewal of groundwater research in the Saskatchewan River headwaters. This project was approved by the Advisory Committee, and was awaiting submission to the Co-ordinating Committee at the end of the year.

Project 40/67 - Marlboro Community Project

This was a small project involving assistance to the Community of Marlboro to help them with the identification of leaders and some other community projects. It was approved by the ARDA Advisory Committee, but at the close of the year was awaiting submission to the Co-ordinating Committee.

CANADA LAND INVENTORY, ALBERTA

The Co-ordinator assumed duties June 18, 1967, to co-ordinate the agencies making the multiple capability inventory of provincial lands.

The objective was to collect extensive information on the land's characteristics and to organize this knowledge so that it can be employed with related data in land use planning. The procedure was to classify and map land according to its capabilities and limitations for each of the several uses named below.

Project Name & Year Started	Agency
Soil Capability for Agriculture, 1963	Alberta Soil Survey
Soil Capability for Forest Production, 1964	Forest Surveys & Planning Branch, Alberta Department of Lands & Forests
Land Suitability for Ungulate Wildlife, 1965	Fish & Wildlife Division, Alberta Department of Lands & Forests
Water Capability for Sport Fish, 1967	Fish & Wildlife Division, Alberta Department of Lands & Forests
Land Capability for Recreational Use, 1965	Parks Branch, Alberta Department of Lands and Forests
Mapping Present Land Use, 1964	Alberta Department of Agriculture, and Department of Geography University of Alberta
Land and Water Capability for Waterfowl, 1965	Financed entirely by Canadian Wildlife Service

Progress was comparable to the national average, about forty percent complete. Termination was planned for March 31, 1971. Publication of the first maps on the scale 1:250,000 is expected early in 1968. The maps which were scheduled for printing are identified for each project as follows by name and block number.

Agriculture	— Foremost 72E, Medicine Hat 72L, Oyen 72M, Lethbridge 82H, Edmonton 83H, Grande Prairie 83M, Winagami 83N, Clear Hills 84D.
Forestry	— Whitecourt 83J, Iosegun Lake 83K, Wapiti 83L, Grande Prairie 83M, Winagami 83N, Lesser Slave Lake 83-0.
Ungulate Wildlife	— Wainwright 73D, Vermilion 73E, Red Deer 83A, Edmonton 83H, Wapiti 83L, Grande Prairie 83M.
Sport Fish	— Nil (work just begun).
Recreation	— Grande Prairie 83M, Winagami 83N, Clear Hills 84D, Peace River 84C.
Present Land use	— Map blocks available for the settled areas of the province.
Waterfowl	— Wainwright 73D, Vermilion 73E, Drumheller 82P, Red Deer 83A, Edmonton 83H.

The Co-ordinator arranged for the co-operation of the inventory sectors with ARDA programs to provide advance maps, ratings, and inventory information to assist decisions in rural planning and development.

Land Use Planning

A pilot project to test the use of Canada Land Inventory and related data in land use planning was initiated for 1968-69. Only the earliest preparations have been made. A measurement of the usefulness of the mapping and land ratings was set as the objective.

PUBLIC INFORMATION SERVICES

In attempting to effectively disseminate ARDA information to all levels of the cross-cultural strata, after one year of operation, this office was of the opinion that the existing media were not reaching the people in the disadvantaged sectors. Therefore, planning a program geared specifically to these sectors indicated a need for communication research in this vital area.

Meetings Attended

The Public Relations Officer attended 61 meetings during 1967, involving small meetings of two or more, to large public meetings related to the dissemination of ARDA information and concepts, or ARDA co-ordination of rural development.

Speaking Engagements (36)

The Public Relations Officer with the Head, ARDA Branch, spoke to Chamber of Commerce gatherings throughout Alberta on ARDA projects in Alberta from the inception of the program in 1961. Using a flannel board demonstration, it was shown how people are motivated and organized toward their goals through the social action process. This work was taken over by Extension and Colleges Division.

Audio-visual Aid Program

Supplementing news releases on ARDA projects, this office has implemented a permanent film and slide library. This will

provide a 35 mm audio-visual record of the progress of projects, which we hope will be used for: field staff training, community groups, formal leaders, or as follow-up aids to leadership training. (These presentations will also present various aspects of rural development programs (farm adjustment, rehabilitation and retraining, etc.). They can be updated by inserting or extracting slides, or by putting on new audio script).

Radio & TV Scripts

- (a) Interviews Taped: Messrs. McAndrews, Sterling, Scott and Thiessen
- (b) TV Appearances: Mr. G. R. Sterling (2) on CBC-TV News.

Advertising

92 ARDA project signs were approved by Provincial-Federal ARDA, to be constructed by the Department of Public Works, for installation in the spring of 1968.

Exhibitions

Initial contact was made with Water Resources Division, Canadian Electronics Limited, and Cardinal Industrial Electronics Limited with regard to creation of a large Alberta map with a phone recorder hook-up which will give audio as well as visual descriptions of ARDA projects throughout the province, and will be used at "A" and "B" type fairs throughout Alberta.

News Releases (On ARDA Projects)

Final approval of the ARDA news release format was obtained in April 1967. Copies of 17 news releases were sent to approximately 2,500 persons on the ARDA mailing list.

EDSON REGIONAL ARDA OFFICE

With the additional staff, it was possible to implement programs that were planned during 1966. The Home Visitors' Program commenced at Hinton in May with the first group of Home Visitors completing their in-service training course in June. The Edson group completed their training in December.

Increased emphasis was placed on reinforcing leadership and increasing communications with a variety of community organizations. This was an excellent means of involving people in studying community problems and relaying information to them. The Community Advisor acted as a liaison between many departments of government and the community.

The land adjustment program continued to have top priority. The Farm Adjustment Committee was organized during 1967.

The educational and training programs, too, began to bear fruit with the first graduates completing their training and all trainees progressing very well.

A. Dissemination of Information

Advisory Council and Zone Development Committees

Four meetings were held to give progress reports and discuss projects. Many informal meetings were held with members of

the Advisory Council to discuss specific problems pertinent to their area.

4 Meetings — Attendance 75.

Technical Panel

One meeting of this group representing all government departments was held to discuss proposals for the comprehensive plan.

1 Meeting — Attendance 30.

Provincial Co-ordinating Committee

Mr. Belyea attended one meeting of this group to discuss projects submitted from C.D. 14.

1 Meeting — Attendance 20.

Agricultural Committees

Many meetings were held with these committees to discuss problems related to agricultural production and drainage. These committees assisted the professional staff in developing guidelines for the land clearing policy and in passing this information on to the people in their respective communities.

15 Meetings — Attendance 751.

Recreation Committees

The C.D. 14 Recreation Committee, consisting of representatives from the various zones and from government departments involved in recreation, met several times to discuss a research project on recreation. Meetings in the various communities were also held to discuss local recreational developments.

9 Meetings — Attendance 283.

Forest Producers & Haulers Association

This committee worked steadily over the past year to try to adjust some of the stresses that developed in the pulp industry pertaining to farmer cutters. As a result, many regulations were changed and this group studied alternatives.

13 Meetings — Attendance 508.

Leadership Development and Training

Courses continued in Series "B" with the Toastmistresses International and local organizations. In addition, thirty men and women registered for Series "A".

6 Meetings — Attendance 214.

Community Organization

A great deal of work was done in strengthening community organizations so that they could function more effectively in representing local people. Such organizations as Farmers Union, community societies and Chamber of Commerce responded very well. In some communities, people studied their present situation

and looked for alternatives and solutions. In other cases, organizations were assisted to work more closely with other government departments such as Municipal Affairs, Youth, and the Extension Branch of the Department of Agriculture.

101 Meetings — Attendance 1,742.

Youth

Until an Area Representative of the Department of Youth was appointed our office accepted the responsibility of 4-H activities. Staff continued to assist in a technical capacity.

6 Meetings — Attendance 780.

Farm and Home Management

The group in Evansburg started its second year. A group completed its first year in Edson and have started its second year. A third group was recently organized in Blue Ridge. The District Agriculturist carried the major responsibility for this program. We assisted with occasional one-day programs.

Staff Meetings

Meetings were attended in St. Paul, Edson, and Edmonton. In addition, meetings of the regional staff were held as necessary.

10 Meetings — Attendance 101.

Miscellaneous Meetings

Meetings were held at the provincial and local level with a number of groups, including: Farm Credit Corporation, F.U. & C.D.A., Education Week Panel, Extension In-Service Training, Edmonton Presbytery, W.I. Biennial Conference, University of Alberta Socio-Eco Club, Edson A.T.A. Professional Improvement Group, F.U.A. Provincial Conference and the University Extension Community Development Conference. While these meetings required considerable preparation, we felt they were valuable in improving public relations and the image of rural development.

17 Meetings — Attendance 1,560.

Total Meetings to disseminate information — 183, Attendance 5,992.

B. Co-ordination

Co-ordination was a continuous process with all staff in the regional office. Locally, it was apparent that government departments looked to this office to assist in solving problems allotted to its activities. Provincially, co-ordination has led to changes in many existing policies and regulations and to the expediting of change in the region.

These meetings have been held on an informal basis as required.

370 Meetings — Attendance 1,480.

C. Farm Adjustment Program

This program involved both the land and the family living on the land. The process of adjustment was to assist the family to shift to another type of employment and to utilize the land

in enlargement of existing farms, or consolidation of land to make a viable unit for farmers who moved from the green to the yellow zone.

This process involved the Regional Resource Co-ordinator, his assistant, the Farm Adjustment Specialist, the Training Counsellor, and the Farm Adjustment Committee. The relocation of families usually required many months to complete, with a great deal of counselling required and considerable follow-up in many cases.

Families that relocated on farms were introduced to, and worked closely with the District Agriculturist on their planning. They were encouraged to join a farm management group.

Of the 30 farms which were purchased, the families are doing the following:

8 families	— early retirement (2 fathers deceased)
11 families	— alternate employment
1 widow	— remarried
4 families	— on training programs
3 families	— relocated on farms
1 family	— still being counselled
1 family	— not known
1 family	— unemployed due to health.

D. Educational Program

Despite changes in regulations of the Department of Manpower and Immigration, the programs in upgrading and skill training proceeded through provincial programs.

Fourteen families were undergoing training and one student completed upgrading and began a nursing aide course. Nine students were upgrading, one student was taking training at Fort McMurray, and one student was taking vocational training at NAIT.

Two students were at Olds Agricultural and Vocational College, and it is anticipated one will graduate in horticulture and the other complete her business course in the spring.

Twenty-four persons were counselled, and of these, seven were enrolled at the Alberta Agricultural and Vocational College for the January semester.

It is anticipated that about eight more students will commence upgrading through the Alberta Vocational Training Program in February.

One of the most important aspects of this program was the work of reinforcing the families as they moved into training. An excellent job was done by our Educational Trainee Supervisor working with these families in Edmonton.

E. Home Visitors Program

In-service training courses were held in Hinton and Edson this year to train 13 Home Visitors. Of this group, 10 worked actively with 25 families.

The training course consisted of a combination of informal classroom instruction and field work. Counselling continued on a weekly basis following completion of the course.

In addition to the Public Health Nurse and Home Economist, who were the continuing members of the team, technical resource specialists assisted with the program from the Home Economics Branch, Health Unit, Canada Manpower, Public Welfare, C.N.I.B., Division of Alcoholism, etc. It was with regret that the Department of Public Welfare felt it was necessary to withdraw their social worker from the team. She participated fully in the training course and counselled at Hinton.

2 Training programs — 24 days, Attendance 173.

25 Counselling sessions — Attendance 181.

In addition to the Home Visitors Program the Home Development Specialists participated in several other programs.

A Home Nursing Course was held in Marlboro with 17 women participating.

7 Meetings — Attendance 98.

They also attended the Guidance Clinic Workshop, a meeting of the Edmonton Welfare Council, and three meetings to explain the Home Visitors Program.

5 Meetings — Attendance 185.

Total Meetings 61 — Attendance 637.

F. Farm and Home Calls

The staff made 1,065 farm and home calls to discuss various problems and aspects of the rural development program.

G. Office Calls, etc.

The following graph of office calls indicates those phases of the program most demanded by the people in the region.

Total Meetings 634 — Attendance 8,349.

Total individuals contacted through meetings, farm & home calls, and office interviews — 12,514.

ST. PAUL REGIONAL ARDA OFFICE

Goals:

The staff of the St. Paul Regional ARDA Office made plans to achieve a number of specific goals for the year 1967:

1. Organize and equip office space that would provide functional service to the public.
2. Create awareness of rural development opportunities in C.D. 12, and disseminate information on the Federal-Provincial ARDA Agreement as well as the services offered by the ARDA administration at the local, provincial, and federal levels.
3. Motivate the local people to initiate programs of self-improvement and self-involvement, for solving socio-economic problems of the area.
4. Assist local people to organize into groups and committees for the purpose of researching their situations, compiling

data, studying alternatives and submitting their suggested solutions in the form of project briefs that could be considered for assistance under the terms of the Federal-Provincial Rural Development Agreement.

5. Call upon the existing service agencies to gather information for an overall picture of all human and physical resources of C.D. 12 to outline a long-term comprehensive plan of total development involving and integrating all agencies and services of the region.

Activities

In keeping with the above guideline, the following undertakings were carried out:

1. Office space was acquired in St. Paul. Furniture and equipment were installed. A stenographer was hired.
2. At 44 public meetings, attended by approximately 4,000 people, the concepts of rural development and ARDA potential were discussed.
3. A presentation was made to the Regional Service Board conference attended by about 100 Municipal and Service Board personnel.
4. Twenty-five local ARDA Committees were set up.
5. Thirty-nine local ARDA Committee meetings were attended by the local ARDA staff.
6. Over 2,000 farm families were surveyed by local committees to establish the needs and desires of the people. The survey was carried out by direct interviews with 857 families, and by questionnaires distributed to 1,200 families.
7. A progress report was circulated to 3,100 individuals who were actively involved in rural development.
8. General reconnaissance studies in the Fort McKay and Fort Chipewyan settlements, and a detailed survey of the Elizabeth Metis Colony for pasture and forage potential, were carried out.
9. Assistance was given committees to draft briefs requesting assistance for three recreation and tourist development projects, and for ten agricultural development projects.
10. Submissions were made to the Provincial ARDA Advisory Committee to consider in C.D. 12:
 - (a) Recreational and tourist development.
 - (b) Rehabilitation and development of Indians and Indian Reserve physical resources.
 - (c) Land clearing and development.
 - (d) Land productivity improvement.
 - (e) Farm adjustment and consolidation.
11. A submission was made to the Economics Division to consider a Metis Colony development program and to assist in the designing of a workable project.

12. A submission was made to the Department of Lands and Forests to consider grazing reserve and community pasture development on behalf of municipal governments and rancher groups.
13. With representatives from the Rural Development Research Branch 25 days were spent interviewing officials of the public educational agencies, Health Units, Public Welfare Department, Agriculture Department, Lands and Forests Department, members of the clergy, Community Development officers, municipal officials, and staff of the Farm Credit Corporation and Canada Manpower. Ideas and data were analysed and integrated in the proposed long-term comprehensive plan for total development of C.D. 12. Results so far indicate a need for financial assistance of such scope that there is urgency in considering establishment of a Special Rural Development Area under the FRED program.
14. In an attempt to co-ordinate efforts and resources of existing local services and agencies, joint discussions at meetings, seminars, and conferences were carried out with members of the following Departments:
 - (a) Public Welfare
 - (b) Agriculture
 - (c) Attorney General
 - (d) Lands & Forests
 - (e) Education
 - (f) Health
 - (g) Municipal Affairs
 - (h) Industry & Development
and with the following agencies:
 - (a) Health Units
 - (b) Preventive Social Service
 - (c) Farm Credit Corporation
 - (d) Canada Manpower
 - (e) Operation Newstart Corporation
 - (f) Federal and Provincial ARDA Administration
 - (g) Municipal and Social Committees
 - (h) Chambers of Commerce and Boards of Trade
 - (i) Tourist Associations.
15. Presentations on leadership training were made at the in-service training session conducted by the Agricultural Extension Division.
16. A three-day seminar on Community Development Approach and Techniques sponsored by the Department of Extension, University of Alberta was attended.
17. The Farm Consolidation Project in C.D. 12 was implemented.
18. Assistance was given to the Saddle Lake Indian Reserve Development Committee to set up procedures to start working out their approved project and to carry out the proposed plan of clearing 3,000 acres during the coming winter. Tenders for brushing contracts were released and specifications for the contracts drawn up.

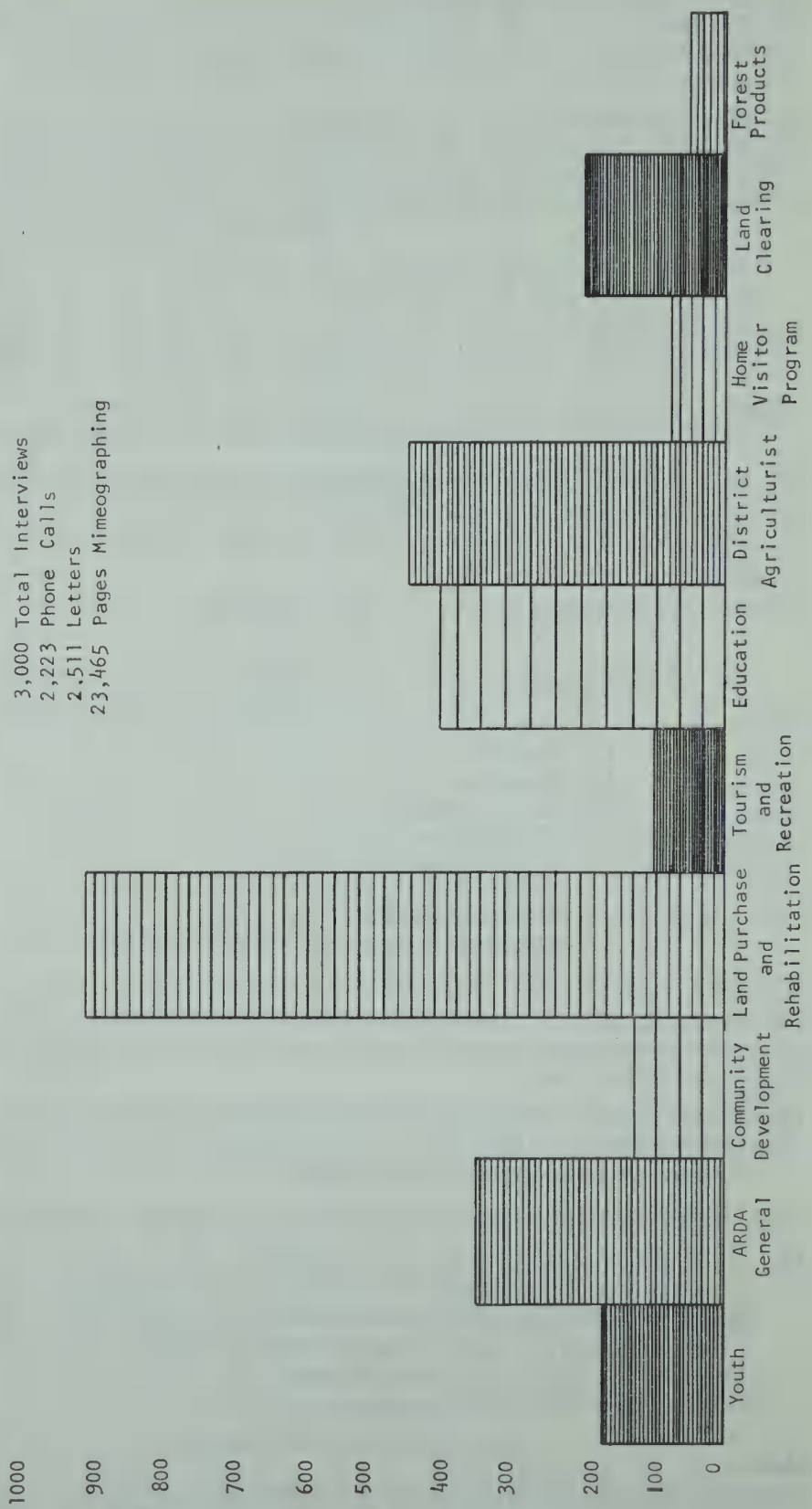
Note:

Until September 1st, 1967, the Co-ordinator carried out the functions of Acting District Agriculturist for the Bonnyville Office, and, until the end of July, the Assistant Co-ordinator was answer-

INTERVIEWS

CD 14 Edson

3,000 Total Interviews
 2,223 Phone Calls
 2,511 Letters
 23,465 Pages Mimeographing



ing the district Home Economist's calls for the agricultural districts of St. Paul, Bonnyville, Smoky Lake and Lac la Biche. Reports of the activities carried out in these capacities have been incorporated in the reports of the Extension Division.

FAIRVIEW REGIONAL ARDA OFFICE

On July 1st a Community Development Program was initiated in Census Division 15 — that area of Alberta commonly referred to as the Peace River Region. The program was in its formative stages. To date the main activity of the Co-ordinator was aimed at creating, among the people of the region, an awareness of their problems. The following group meetings were held for the purpose of developing this awareness among as many people and organizations as possible:

Meeting	No. of People Attended
Agriculture Extension Meeting, Tangent	35
Little Buffalo Lake Group	22
Faust Community Development Committee	12
East Doe River Area Group	16
Tangent ARDA Committee, three meetings	36
Beaverlodge Co-ordinating Meeting	45
Co-ordinating Group, Grande Prairie	16
Manning F.U.A. Sub-District Directors	14
Wabasca Community Meeting	20
Peace River Chamber of Commerce	30
Rotary Club, Fairview	24
Peace River Associated Chamber of Commerce and Northern Development Council	34
Co-ordinating Committee, Grande Prairie	22
Lesser Slave Lake Water Level Control & Development Association	12

A great deal more must be done to assist people in becoming aware of the nature of the problems confronting rural communities.

The people of several areas, after considerable thought and study suggested concrete action programs. The outline of some projects were forwarded to the Provincial ARDA Committee for consideration. The areas that submitted projects and the title of the project are listed below:

<u>Areas</u>	<u>Title of Project</u>
Tangent	Land Clearing Project
Tangent	A Farm Production and Management Program
Little Buffalo Lake	Little Buffalo Lake Farming Co-operative, Beef Cattle Grazing Project.

Since the office opened in September, some 25 persons sought information or counselling services.

REPORT OF THE VETERINARY SERVICES DIVISION

J. G. O'DONOGHUE, V.S., D.V.M., Director
 H. N. VANCE, V.S., D.V.M., M.Sc., Assistant Director, Head,
 Laboratory Services
 G. R. WHENHAM, V.S., D.V.M., Assistant Director, Head, Field Services

LABORATORY SERVICES

EDMONTON

F. E. GRAESSER, B.S.A., V.S., D.V.M., Supervisor and Histopathologist
 G. S. WILTON, V.S., D.V.M., Head, Animal Pathology
 E. W. GILCHRIST, M.R.C.V.S., Veterinary Parasitologist
 D. W. MacDONALD, V.S., D.V.M., M.Sc., Veterinary Pathologist
 J. HOWELL, V.S., D.V.M., Head Poultry Pathology
 R. G. CHRISTIAN, D.V.M., Veterinary Pathologist
 G. G. KLAVANO, B.Sc., D.V.M., Microbiologist
 S. A. RAWLUK, B.Sc., Laboratory Scientist
 E. BURROUGHS, B.Sc., Laboratory Scientist
 D. MELNICK, B.Sc., Laboratory Scientist

LETHBRIDGE

W. N. HARRIES, M.R.C.V.S., Head, Lethbridge Laboratory
 G. A. CHALMERS, D.V.M., Veterinary Pathologist
 J. D. WOOD, B.Sc., Laboratory Scientist

FIELD SERVICES

J. P. BEST, V.S., D.V.M., Head, Veterinary Inspection
 W. P. BRISBANE, V.S., D.V.M., Head, Communicable Diseases
 M. W. STONE, B.Sc., M.R.C.V.S., Herd Health Programs

ANALYTICAL SERVICES

MRS. K. I. STRAUSS, B.Sc., (Honors in Chemistry) Provincial Analyst

FUR FARMS BRANCH

R. W. GILLIES, Supervisor

A. GENERAL

The Provincial Analyst and staff were transferred from the Department of the Attorney General to the Division December 1.

Dr. D. W. MacDONald and Dr. R. G. Christian joined the staff as Veterinary Pathologists. Dr. K. R. Macdonald, Emergency Planning Officer resigned.

Construction of the Agriculture and Wildlife Laboratory commenced March 8, 1967. Progress has been rapid and the estimated completion date of August 31, 1968 is realistic. The regional Laboratory, Fairview, was delayed.

The laboratories processed an increased number of specimens (25,000). Approximately 10% of this total was specimens from the Swine and Turkey Health Programs, preventive health policies.

The total of livestock inspected at public auction markets was 1,141,097. The first time that the figure of one million has been exceeded.

The Provincial Bovine Brucellosis Restricted Area Program terminated December 31, at which time compulsory vaccination ceased in all municipalities. The program was initiated in 1949. Since then 5,767,106 calves have been vaccinated, and the incidence of infection reduced from a high of 11.5% to 0.5% as recorded by Federal blood test results in 1965. The cattle population increased from 1,500,000 to 3,400,000 in this same period. The Brucellosis Control Section became the Communicable Diseases Section.

With the inspection of 13,449 cattle entering the 9 grazing reserves, a disease control policy for community pastures was introduced.

The study of bovine vibriosis continued. Vaccination trials included individual herds and four community pastures.

In late summer anthrax recurred in Buffalo in Wood Buffalo Park. It was also diagnosed in cattle on four premises in the Fort Vermilion district and on a farm in the Consort area. Rabies was not diagnosed. Equine encephalomyelitis was restricted to a few sporadic cases. Bovine pulmonary emphysema and the respiratory disease complex of cattle were significant disease conditions.

The future and economics of large animal practice in Alberta, as in other provinces of Canada, was a matter of concern.

The trend to larger production units and the decreasing number of farms, are, in part, responsible. An additional problem is the maintenance of private practice in fringe or developing areas. A Ministerial Committee, with Department and Alberta Veterinary Medical Association representation, spent considerable time on comprehensive studies of the subject.

An in-service training program was commenced when Dr. G. R. Spencer, Head, Department of Pathology, Washington State University was brought to the Edmonton Laboratory for a week of lectures and demonstrations.

With the Department of Health, feasibility studies of a co-operative provincial meat inspection policy were initiated.

A highlight of Emergency Measures activities was Operation Snowbound. Severe blizzards in southern Alberta on April 17 - 20, and 27 - 30 left livestock stranded without feed and created hazardous situations for some people. Municipal governments, District Agriculturists, and others involved with Agriculture, reacted quickly and efficiently within the framework of the Emergency Measures Organization. Helicopter and Nodwell tracked oversnow vehicles were utilized.

OPERATION SNOWBOUND 1967



Volunteers unloading and distributing feed to cattle which in this case had found a bare island in the sea of snow. (Lethbridge Herald)



A Nodwell tracked over-snow vehicle lays string of bales of hay. (Lethbridge Herald Photo).

The Division continued to co-operate with other Divisions, Departments and agencies in all matters that related to diseases of animals and human health. The assistance of Extension, Animal Industry, and Plant Industry Divisions, Department of Lands and Forests, and Fish and Wildlife Division is gratefully acknowledged. Appreciation is expressed to the Department of Health, Public Health Laboratory, Veterinarians, the Feed Industry, and Municipal officials.

More detailed information is given in the following report of Laboratory and Field Services.

FIELD SERVICES

Field activities of the Division cover the administration of official legislative programs, such as Brucellosis Control, Veterinary Inspection Services, Livestock Health Programs, control of livestock medicines, and the investigation of specific disease problems, field study projects and extension.

SUMMARY OF ACTIVITIES

<u>Field Investigations</u>		<u>Inspections</u>	
Cattle	72	Livestock Markets	166
Swine	46	Stockyards	308
Sheep	1	Livestock Medicines	401
Horses	3	Swine R.O.P. Bonus	31
Poultry	9	Swine Herd Health	157
Fur Animals	22	Supp. S.H.H.P.	8
Wildlife	6	Grazing Reserves	16
Mastitis	9	Swine Show	2
Total	<u>168</u>	R.O.P. Test Station	4
		A.I.	2
		Turkey Health Flock	10
		Total	<u>1,105</u>
<u>Meetings</u>		<u>Lectures</u>	
Brucellosis	26	University	37
Domestic Animals	13	Vocational Colleges	1
Poultry	6	Others	18
Professional	35	Short Courses	5
Others	86	Total	<u>61</u>
Community Pastures	14	Individual Farm Visits	379
Total	<u>180</u>		

Veterinary Education

Six years are required to complete the course in Veterinary Medicine following senior matriculation. This consists of two years of pre-veterinary studies available at Universities or Junior Colleges in Alberta followed by the four year professional course, available in Saskatchewan, Ontario, or Quebec.

Pre-Veterinary Students in Alberta:

	1st Year	2nd Year
University of Alberta	23	20
University of Calgary	23	6
University of Lethbridge	1	2
Medicine Hat Junior College	0	0
Red Deer Junior College	2	0
Camrose Junior College	1	0
Total	<u>50</u>	<u>28</u>

Albertans Attending Veterinary Colleges:

	1st	2nd	3rd	4th	5th
Saskatchewan	10	15	12		
Ontario	2	7	3	2	
Quebec					1
Total	<u>12</u>	<u>22</u>	<u>15</u>	<u>2</u>	<u>1</u>

Alberta students of the Western College of Veterinary Medicine won seven of the twelve academic awards offered in 1967.

Practising Veterinarians

Veterinarians in private practice at the end of the year numbered 118 large animal practitioners in 77 practices, including forty-three large animal clinics, and 22 small animal practitioners in 11 clinics, a total of 140 practitioners. There was a net loss of 9 large animal practitioners, but the number of practices remained the same indicating a decrease in size of some multiple practices.

BRUCELLOSIS CONTROL

Eleven areas reverted to voluntary vaccination during the year, making a total of thirty-five areas under voluntary vaccination on farms. The remaining Brucellosis Restricted Areas reverted to voluntary vaccination December 31, 1967. All heifer calves sold through Class "D", "E" and "F" Stockyards were vaccinated with Strain 19 vaccine. The continued vaccination of replacement heifer calves was advocated in voluntary vaccination areas.

Inspectors, appointed under the Livestock Diseases Act, comprising 147 Veterinarians and 63 Agricultural Fieldmen carried out the vaccination and organizational phases of the program.

Calfood Vaccination

A total of 364,238 calves were vaccinated with *Brucella abortus* Strain 19 vaccine. The official vaccination age for heifer calves remained at 120 to 270 days. Calves vaccinated between these ages were classed as "Official Vaccinates". The export of heifer calves to the United States was not as heavy as in previous years; however a considerable number were exported. Duplicate vaccination certificates were issued for export purposes. In Alberta, over five and one-half million heifer calves have been vaccinated with Strain 19 vaccine since the Brucellosis Restricted Area Regulations were passed in 1949.

COMMUNICABLE DISEASES

Vibriosis

A vaccination trial during 1966 of the new vibriosis bacterin gave very good results. The heifers on a farm were divided into two groups of 20 each, one group received the bacterin, with the other group left as a control. In 1967, the twenty vaccinates produced 19 calves. In the control group only 9 heifers calved. This was a limited trial, however, the results were significant. Further trials were conducted during 1967 with this same herd to increase our information.

Approximately 2,100 cattle were vaccinated in Provincial Grazing Reserves to further evaluate the efficiency of the new bacterin.

Disease Reporting Statistics

To complement information gathered from laboratory submissions, a procedure for morbidity and mortality reporting was maintained. Co-operating veterinary practices, representing approximately 10% of veterinary calls made in the year supplied the statistics. Monthly returns were processed covering calls to 9,787 premises.

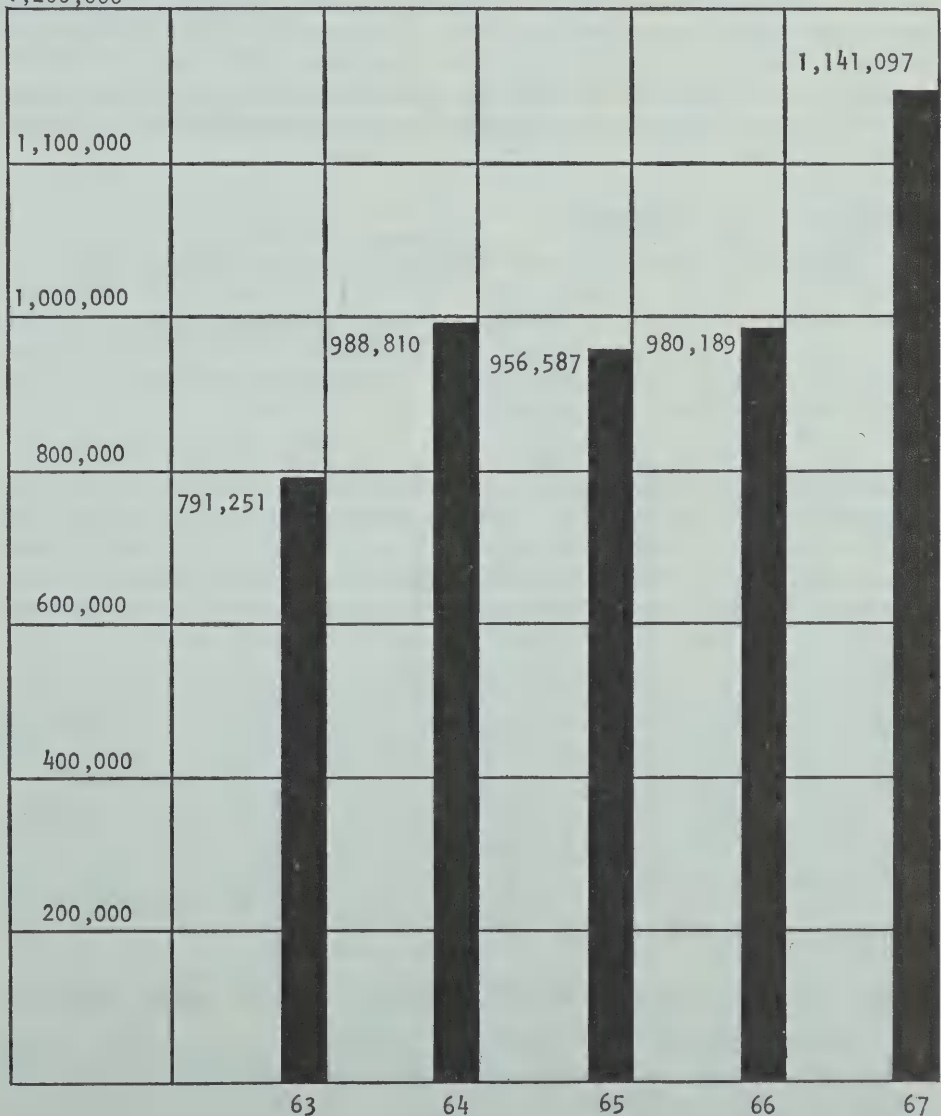
A new veterinarian's monthly report was instituted in July for the more important communicable diseases, other than those controlled by the Federal Health of Animals Branch.

VETERINARY INSPECTION SECTION

Stockyards

Two new livestock markets were opened during 1967, one at Lethbridge and one at Valleyview, and brought under veterinary

Livestock Inspected at Class "D", "E" and "F" Stockyards



inspection 56 Class "D", 2 Class "E" and 4 Class "F" Stockyards. A total of 1,141,097 animals were inspected pursuant to this program. This required 4,653 man days of livestock inspection and 137 days for sanitary inspection.

The accompanying chart illustrates the volume of livestock inspected at all livestock markets under supervision for the years 1963 to 1967 inclusive.

Rejections totalled 11,877 animals. Cancer eye, lump jaw, mastitis and enteritis were the diseases most commonly encountered in cattle. In swine, mange, rhinitis, arthritis and enteritis headed the list of reasons for rejection.

The amendment prohibiting the sale of calves under eight days of age was quite effective and very well received.

Supervision was also supplied to 35 Class "C" and 246 Class "G" Stockyards.

COMMUNITY PASTURES

A veterinary inspection program for certain community pastures was introduced in 1967. This service provided supervision of nine provincial grazing reserves. A total of 13,499 cattle were inspected as they entered the reserves, 36 of which were rejected for various reasons. Post mortem examinations were conducted on 19 animals during the summer.

EDUCATIONAL COURSES

The Division took an active part in the preparation and presentation of short courses. The Seventh Annual Feed Industry Conference was held in Calgary in co-operation with the Feed Industry and the Department of Extension of the University of Alberta. It was well attended by Feed Industry personnel from inside and outside of the province.

The Division co-operated with the Poultry Branch of the Animal Industry Division in presenting the Poultry Industry Conference held in Edmonton. This conference has supplanted the Hatcherymen's Short Course which was held for about fifteen years previously. Assistance was also given to the Western Stock Growers Association in planning the fourth annual Stockmen's Short Course held at the Banff School of Fine Arts.

Veterinarians of both Field and Laboratory Services presented lectures to classes in Agriculture at the University of Alberta. The course, Veterinary Science 300, was presented in the fall term to 37 agricultural students in Animal Science and pre-veterinary medicine. In addition, four lectures and four laboratory demonstrations in anatomy were given to the students of Animal Science 310 during the spring term and two lectures to familiarize students with the role of veterinary medicine were presented to all freshmen in Agriculture 202.

LIVESTOCK MEDICINE REGULATIONS — L. W. Paige, Inspector

Three hundred and ninety-six outlets were licensed during 1967, an increase of twenty-one over 1966. Three hundred and ninety-seven inspections were made of licensed outlets and

premises of new applicants. Irregularities, such as having outdated medicines and medicines not stored properly were corrected on the spot. One wholesale outlet was investigated for selling a tranquilizer product which was not allowed, and a warning issued.

The Advisory Committee met once during the year in October. New applications were reviewed and recommendations made that certain live virus vaccines be put on the restricted list. Restrictions on the sale of iron preparations for the prevention of pig anemia were removed.

The greater part of retail sales consisted of biologics, antibiotics, scour treatments and medicines for the treatment of mastitis.

Under Poultry Vaccine Regulations, licenses to sell infectious bronchitis and Newcastle Disease vaccines were issued to 23 pharmacists, 11 hatcheries, and 13 veterinarians.

HUMANE SLAUGHTER AND LICENSING OF SLAUGHTERHOUSES

A total of one hundred and three slaughterhouse licenses were issued, of these eight paid a direct license fee. The remainder were licensed under the Frozen Foods Act.

Rabies control and shipping container depot operated by Pest Control Officers, District Agriculturists, and Forestry Officers were kept supplied with containers and history forms to ensure that suspected animals would be submitted for examination.

SWINE HERD HEALTH PROGRAM

1967 was a busy year for the program. While the total enrolment increased by one, interest in the program continued to be shown by a number of non-enrolled hog producers.

All enrolled herds received regular quarterly inspections. Additional inspections were carried out on eight occasions to investigate disease problems that had broken out. Further blood samples were drawn from one herd to assist the Federal Laboratory at Hull, P.Q. in their studies on the epidemiology of haemagglutinating encephalomyelitis virus (H.E.V.) infection, and a total of 56 bloods were flown to the University of Cambridge, England, to be tested for swine influenza antibodies. The breeding stock in two herds was tuberculin tested following a report from federal veterinarians that lesions suspicious of tuberculosis had been disclosed in hogs from these premises at slaughter. No animal reacted to the test. Veterinary practitioners were again used to a limited extent for herd inspections, and the likelihood is that they will be used more in the future. The survey for the presence of vibrio dysentery organisms, commenced last year, was completed. The organism was present in samples submitted from 21 herds of 31 herds sampled, i.e. 68 per cent.

Possibly one of the greatest achievements of the Swine Herd Health Program since its inception, was the fact that at the end of 1965, two certified herds exported a total of 24 Lacombe hogs to Great Britain. The significance of this becomes more apparent

when it is realized that hogs from other provinces in Canada had been selected by the British buyers, but only those from Alberta met the rigid U.K. import requirements. Further to this, Britain requested hogs of American breeds, and since regulations did not permit import direct from the United States, had requested Alberta breeders to assist. As a result, approximately 80 hogs were imported into Alberta mainly from Nebraska during 1967. It is hoped that some of the offspring of this stock will be exported to Britain.

With full co-operation of the head of the station, an investigation into the epidemiology of turbinate changes in an experimental farm herd was commenced. It is proposed to supply a number of primary S.P.F. pigs to the station to be raised from their own stock. The heads from all hogs going to the abattoir from this herd are being examined.

Summary of Activities of S.H.H.P. during 1967:

Total enrolment at January 1, 1967	40
Number of herd inspections	157
Supplementary inspections	8
Necropsies performed at Laboratory	109
Necropsies performed by practitioners	17
Heads and lungs examined	801
Miscellaneous specimens	11
Total swabs examined	32
Total blood samples drawn	89
Total animals T.B. tested	107
New enrollees	5
Resignations	4
Total enrolment at December 31, 1967	41
Epidemiology experiment heads examined	526

MASTITIS PROGRAM

A program to assist dairy farmers in controlling mastitis has commenced in a small way. Investigations are being confined to those herds in which mastitis is a definite problem, or where a special request is made, as was done in one case by the local Medical Officer of Health. Visits were made to nine farms.

AGRICULTURE EMERGENCY MEASURES

The Alberta Department of Agriculture Emergency Measures Survival Plan was completed. Maps of all municipalities and counties for each zone were placed in each zone headquarters, and for the entire province at Relocation Headquarters. Lists of telephone fanout, emergency headquarter staffing, and assignment of professional staff were prepared and distributed.

Thirty-six meetings included a national planning conference, attended by representatives of Canada, Alberta and British Columbia, Departments of Agriculture. E.P.O. and assigned departmental staff participated in one zone exercise "Triad". Four professional and three farmer candidates were selected for courses at Civil Defence College, Arnprior, Ontario. Six lectures were given to courses at the Alberta Civil Defence School.

Operation "Snowbound" provided the first opportunity for Agriculture to operate in a civil emergency. Heavy snowfalls

and blizzards in southern Alberta on April 17 - 20 and again, April 27 to 30, deposited up to 70 inches of snow. Cattle were stranded without feed, particularly in the Claresholm, Lethbridge, and Cardston districts. An emergency was recognized April 29, and with the aid of the staff and structure of the Alberta Emergency Measures Organization, relief operations were underway 8:00 a.m. April 30. Central H.Q., Edmonton, Southern Zone H.Q., Calgary, a control centre in offices of M.D. No. 26, Claresholm, a control centre at the Lethbridge airport, together with District Agriculturists and other M.D. offices in affected areas, functioned on a 24 hour basis for the periods April 30 to May 4, and again May 10 to 15. In the two periods, 15 helicopters, 3 Nodwell tracked vehicles, together with municipal and privately owned trucks and equipment met 206 requests for assistance, distributed 387 tons of hay and pellets to 42,000 cattle and stockpiled 1,086 tons of hay for future feeding. Municipal government continued as the local authority throughout.

Total financial loss from the storms was difficult to assess. It was known that calf losses ranged from 3 - 25% on individual premises, and would have been higher without emergency feed.

LABORATORY SERVICES

The primary responsibility of the laboratory service was to provide a diagnostic service to the livestock industry. The laboratories at Edmonton and Lethbridge provided equipment and specially trained personnel not available in private clinics or practices. This enabled us to use specialized diagnostic techniques most essential as a second line of defence against livestock diseases.

Improvements in techniques, staffing, and equipment were made to fully utilize the research information becoming available to us. Fluorescent antibody equipment was provided to the Lethbridge laboratory. To keep abreast of the medical sciences and new diagnostic methods, a regular program of seminars and case conferences was carried on for the professional staff. A library of 20 periodicals in veterinary medicine and allied fields also aided us in meeting this responsibility.

In-staff training was augmented for the first time by a training period with a distinguished visiting lecturer. Dr. H. C. Spencer, Head of Veterinary Pathology at Washington State University, conducted lectures and workshops for our veterinary staff over a one-week period. This opportunity for continuing education was appreciated by the staff and will be reflected in a better service to the industry. One measure of its value was that our counterparts from British Columbia, Saskatchewan, Manitoba, and Ontario came to Edmonton to participate in the program.

The assistant director, laboratory services, was chairman of the planning committee for the Alberta Agriculture and Wildlife Consolidated Laboratories. A great deal of time was spent on co-ordinating planning for the building, and on detailed planning for the veterinary facilities. The general contract was awarded in February. Rapid progress has been made, and it is expected that the building itself will be completed in advance of the target date of August 31, 1968.

The transfer of the former provincial analyst and industrial laboratories to this branch has added additional administrative responsibilities but presented us with the opportunity to guide further development of toxicology services, particularly in the veterinary field.

Detailed plans for the Fairview laboratory were completed, and it is hoped that construction will start within a few months.

SPECIMENS EXAMINED

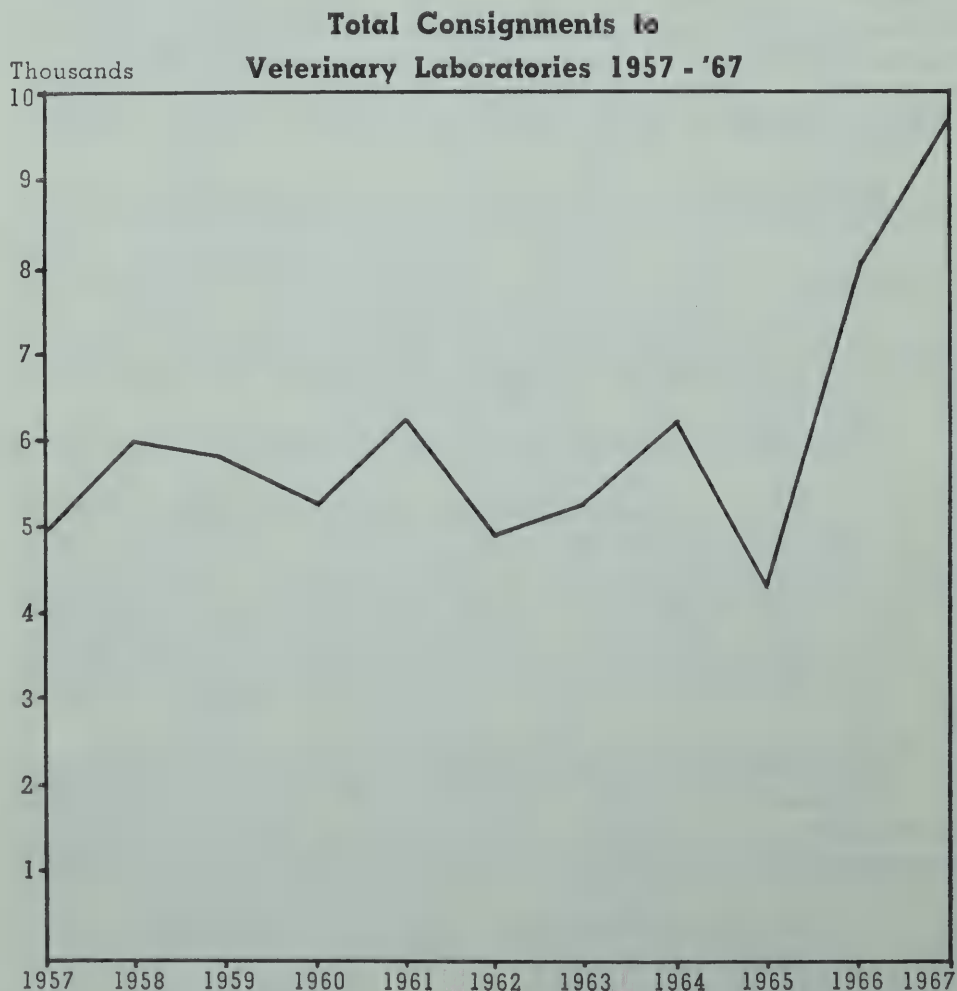
Edmonton Laboratory.

A total of 20,638 specimens representing 8,045 consignments were examined in 1967. The animal section handled 10,428 specimens from 3,951 consignments; the poultry section 8,539 specimens from 2,423 consignments, and special microbiology 1,671 specimens.

Lethbridge Laboratory.

The Lethbridge regional diagnostic laboratory completed its second full year of operation. The 3,943 specimens examined from 1,680 premises reflected a modest increase in the work load.

The following graph indicates the general increase in the number of submissions and specimens examined during the last ten years.



Following is a list of the domestic species and numbers of specimens examined from each. While these accounted for the bulk of the work load, a wide variety of wildlife species were also examined. More than half of the Edmonton total is accounted for by blood and milk samples.

	Edmonton	Lethbridge
Cattle	3,116	1,103
Swine	4,234	452
Sheep	223	66
Horse	121	75
Dog	746	106
Cat	225	48
Fur	223	36
Wildlife	385	106
Chickens	4,798	1,119
Turkeys	3,040	666
Bloods		
avian	14,513	
animal	1,681	118
Others		
avian	291	113
animal	887	57
TOTAL	34,483	4,065

PROMINENT DISEASES

The following chart lists the more important diseases in various species based on laboratory records.

	Edmonton	Lethbridge
Cattle:		
Blackleg	44	2
Pneumonia	143	36
Colibacillosis	86	32
Inf. Bov. Rhinotracheitis	5	7
Johne's Disease	6	
Lungworm	5	
Malignant Edema	44	6
Mixed Clost. Infection	47	7
Nutritional Myopathy	107	
Polioencephalomalacia	9	6
Pulmonary Emphysema	12	14
Virus Diarrhea	3	8
Vitamin A Deficiency	70	
Swine:		
Anemia	19	3
Pneumonia	118	32
E. coli Infection	134	66
Edema Disease	33	6
Encephalitis	26	9
Enteritis	92	25
Erysipelas	32	9
Gastro-Enteritis	25	
Mulberry Heart Disease	21	7
Necrotic Enteritis	26	3
Vibrionic Dysentery	39	33

Sheep:

Enterotoxemia	7	
Pneumonia	31	7

Canine:

Distemper	7	2
Inf. Canine Hepatitis	8	3
Pneumonia	6	1

Poultry:

Air Sac Infection	83	26
Ascites & Oedema	39	6
Capillaria Worms	76	11
Fowl Cholera	23	1
Coccidiosis	120	24
Coliform Septicemia	128	21
Deficiencies	118	6
Avian Encephalomyelitis	15	
Leukosis: Lymphoid	141	17
Marek's	93	39

Diarrheas and pneumonias accounted for most losses in domestic animals. Better feeding and management could prevent many of these cases.

In cattle, shipping fever was again a cause of heavy losses through deaths and reduced weight gains. Losses due to calf scours were not as heavy as they have been in some recent years. Virus diarrhea and polioencephalomalacia continued to be troublesome problems because of lack of effective control measures. There were several serious outbreaks of infectious bovine rhinotracheitis. Nutritional myopathies were extremely common. Abortion and neonatal disease problems associated with nutrition were found frequently, in two cases associated with heavy silage feeding.

Swine losses due to poor nutrition and colibacillosis were common. Some of the less common diseases such as mulberry heart disease, vibronic dysentery, and viral encephalitis were troublesome, again due to a lack of sufficient knowledge of these diseases to bring them under control. There were very few cases of Western Encephalitis in horses, all in the southern area. Several serious outbreaks of distemper were encountered in mink.

Chicken losses due to leukosis were again extremely common. Marek's disease and lymphatic leukosis were the most prevalent forms. Chronic respiratory disease was one of the more serious conditions affecting chicken broiler flocks. The increase in coccidiosis seen in the previous four years continued, however most cases are now seen in pullets. Diseases due to faulty nutrition and management are still common. Chronic fowl cholera was seen more frequently than in other recent years.

In turkeys, air sacculitis was again prevalent, and Arizona paracolon infections were on the increase. Lameness and leg weakness in older birds was a serious problem. In general, nutritional deficiencies were much reduced over previous years.

SPECIAL INVESTIGATIONS

During the course of routine specimen examination and farm visiting, certain disease problems often arise which require more detailed investigation. The following special investigations were undertaken:

- Turkey health pilot program (continuation)
- Pesticide residues in poultry meat
 - (a) mercury
 - (b) chlorinated hydrocarbons
- Histological studies on tissues from birds fed rape-seed meal
- Aleutian disease survey
- Pseudomonas infection in chinchilla
- Bighorn sheep losses (continuation)
- Wildlife disease serological survey
- Wildlife disease mortality survey (Lethbridge)
- Comparative culture methods for control of contamination
- Ovine vibriosis — birds as possible vectors
- Swine vibriosis survey
- Swine influenza serological survey
- Rhinitis epizootiological study
- Calf scours and pneumonia (continuation)
- Possible S.M.E.D.I. virus infection in swine

HISTOPATHOLOGY SECTION

The primary responsibility of this section was the preparation and microscopic examination of sections from diseased tissues. In this capacity, it continued to provide a vital service as a major diagnostic function of the laboratory. While the majority of the tissues were forwarded by our animal and poultry pathologists, an increasingly large number of direct submissions was received from practicing veterinarians throughout the province.

During the year, 10,057 tissues were processed, from which approximately 10,200 sections were prepared, examined under the microscope, and the findings reported. This represents an increase of 15% in the work load. The following chart outlines the work performed.

Sections prepared and examined:

Domestic animals	5,669
Poultry	3,596
Fur bearing and miscellaneous	792
Total	<u>10,057</u>

In addition to the histopathological work, this section produced photographic slides and prints for use within the division, as well as preserving and mounting gross specimens for displays and educational purposes.

MICROBIOLOGY SECTION

(a) Bacteriology — Most necropsy material submitted to pathologists for diagnosis is examined for pathogenic bacteria. The bacteriology section processed 3,273 specimens from the Animal Disease Section with an average of 4.7 tissues per submission, and 5,213 specimens with an average of 3.6 tissues per submission from the Poultry Section. Subculturing and broth

inoculations to arrive at final identification of bacteria required 51,258 media plates, and 8,900 tubes of special broth and sugars. In addition, 457 laboratory animals were used to establish pathogenicity of isolated bacteria. One hundred fifty-nine serum samples and one hundred-twelve tissue specimens were shipped to other laboratories for additional special examinations. The work is summarized in the following list:

Bacteriological Examinations — Poultry	5,213
Animal	3,273
Blood Counts	65
Skin Scrapings	82
Urinalysis	39
Cuboni Pregnancy Tests	12
Milk Samples	3,152
Fluff Samples	400
Intestinal Contents	42

(b) Serology — Twenty-nine thousand six hundred and eleven tests were conducted on blood samples from seven species.

(c) Virology — One thousand three hundred and thirteen samples from 12 species were examined using fertile eggs and other special media for virus and Mycoplasma organisms.

(d) Biologicals — The year has been marked by a sharp increase in the number of requests to prepare autogenous vaccines and bacterins. There were 54 specimens received, and vaccine and bacterins were produced in the amount of 11,884 liters.

(e) Fetal Examinations — Three hundred and four aborted fetus were examined to determine the cause of reproductive failures.

PARASITOLOGY

The last year saw a sharp increase in the number of both submissions and specimens, as illustrated in the table below.

	1966	1967
Submissions	420	781
Specimens	1200	1756

Several autopsies were carried out on Rocky Mountain Bighorn Sheep during the early part of the year. All lungs examined were infested with lungworm of the Genus *Protostrongylus*. The first specimen of the cestode *Wyominia tetoni* to be reported in Bighorn Sheep in Canada was found in this laboratory.

There was a sharp increase in the number of moose portions submitted. A large proportion of these were infected with bladder worms of cestodes, principally *Taenia krabbei* and *Echinococcus* species.

There were fewer cases of lungworm found in domestic cattle submitted to the laboratory during the last year. *Coccidia* and *Capillaria* remain the most troublesome parasites of poultry.

TOXICOLOGY

A total of 708 laboratory specimens were submitted for toxicological examinations. Most of these were animal and poultry specimens taken from cases of suspected poisoning. The remainder consisted of water and feed samples which were suspected of producing harmful effects in livestock. Strychnine was the most frequently encountered poison.

CORRESPONDENCE AND COMMUNICATIONS

Correspondence is necessary to inform veterinarians, livestock owners or their agents concerning diagnosis and recommendations. Presentations to various groups and to professional organizations are also carried out. Such communications included: (1966 figures in brackets).

Letters	21,854	(20,651)
News Releases	24	(21)
Radio and TV Interviews	24	(25)
Transparencies and Slides	150	(154)
Photographic Prints	30	(40)
Scientific Papers*	5	(4)
Presentations at Meetings**	4	(4)

* (1) "Hypertrophic Pulmonary Osteoarthropathy in a Mink". G. S. Wilton and F. E. Graesser. Canadian Veterinary Journal. Volume 8, No. 3, March, 1967.

(2) "Clostridium Perfringens as a Pathogen for Cattle — A Literature Review". H. N. Vance. C.J.C.M. Volume 31, No. 10, October, 1967.

(3) "A Survey of the Bovine Alimentary Tract for Clostridium Perfringens". H. N. Vance. C.J.C.M. Volume 31, No. 10, October, 1967.

(4) "Western Encephalitis in Alberta — 1965". O. M. Morgante and H. N. Vance. C.J.C.M. (In press).

(5) "Serological and Cultural Studies of Chicken Breeding Flocks and their Progeny for Mycoplasma". H. C. Carlson and J. Howell. Avian Diseases. Volume 11, No. 1, February, 1967.

** (1) "Alberta Disease Report". J. Howell. Poultry Industry Conference, November 15, 1967, Edmonton.

(2) "Pneumonia and Respiratory Disease". H. N. Vance. Feed Industry Conference 1967, November 3, 1967, Calgary.

(3) "Feed Quality and the Veterinary Practitioner". G. R. Whenham. Feed Industry Conference, November 4, 1967, Calgary.

(4) "Chinchilla Diseases". G. S. Wilton. Annual Meeting, The National Chinchilla Breeders of Canada, November 10, 1967, Calgary.

Several thousand bulletins on veterinary subjects were distributed. Also, various informal presentations were made at many farm group meetings.

FUR FARM BRANCH

R. W. Gillies, Supervisor

GENERAL

As mentioned in last year's annual report, mink farmers suffered a decline of 30% in pelt returns in early sales of December and January of 1966-1967. Subsequent sales became worse and those who withheld pelts finally had to accept even lower prices. Alberta mink farmers produced 190,691 pelts at these reduced figures, but somehow survived a very depressing season.

HEALTH

Due to decreased pelt returns, vaccination programs were curtailed to a marked extent and four stubborn cases of distemper were diagnosed. Mink tissues were collected during the pelting season to conduct some Aleutian Disease testing.

ASSOCIATIONS, SHOWS, FIELD DAYS AND EXTENSION

This branch supported and assisted the many breeder groups in their various activities and meetings. The Lesser Slave Lake Mink Breeders consolidated their Association to combine the whole area. A very successful Annual Live Mink Show was held at Lac la Biche, with Mr. Cecil Johnston of the Hudson Bay Company, Montreal, acting as Judge. The Supervisor attended the January 1967 E.M.O. course at Arnprior and while in the East was granted the privilege of attending the January Canada Mink Breeders sale at the Hudson Bay Fur Auction in Montreal. This is the biggest Auction House in Canada and was a real experience and education in modern Fur Auction Selling.

OFFICE AND FIELD PROGRAM

The long established office and field policy was continued. Four Department bulletins were published to advise and assist the Alberta Mink Breeders on a number of subjects. These bulletins have proven a useful media to inform the mink breeders, so wide-spread in this province. Articles from these bulletins have been picked up and reprinted in fur magazines in Canada and the U.S.A.

CURRENT COMMENTS

The fur market of 1967 and early 1968 opened with good buying power and clearances of Canadian pelts, **BUT** at a price fully 5% below the depressed market of December 1966. Standard or dark mink were 5 to 10% stronger, but mutations were 10 to 15% lower than in the previous season, so unless the market shows an improvement, the national average will likely be even less than it was in the previous season. If Alberta lakes produce levels of fish equivalent to the past few seasons, it will assist the Alberta mink farmer considerably, but if volumes of fish drop (which they often do) the mink farmers problems will be compounded. The salvation of the mink industry must be a return to better prices, or many will be forced out.

CHINCHILLA

There were 206 licenses issued to chinchilla raisers, who declared 12,347 chinchilla on Alberta farms.

RABBITS FOR MEAT AND FUR

This fur-bearer is creating considerable interest and a number of new Rabbit Breeders Associations have been established in the province. No licenses or registrations are required from this growing group of breeders. The eviscerating plant of the Calgary Rabbit Processors is now in operation, with Health of Animal Inspection, and are conducting weekly kills. Unless greater volumes of rabbit are received at this plant it may have trouble financing and operating.

FUR FARM ANNUAL REPORT
FUR FARM STATISTICS TO AUGUST 31, 1967

Kind of Animal	Total no. of Animals	Average value per Animal Sept. 1966	Total Valuation
Mink Standard	106,546	\$13.50	\$1,438,371
Mink Mutation	159,240	14.50	2,308,980
Chinchilla	12,347	12.00	148,164
Fox	42	15.00	630
Nutria	203	5.00	1,015
Miscellaneous	1		
TOTAL DECLARED	278,379		3,897,160

Livestock value on current pelt prices
Number Pelting in Alberta

Mink Standard	78,429	\$13.50	\$1,058,792
Mink Mutation	112,262	14.50	1,627,799
Chinchilla	2,062	12.00	24,744
Fox			
Nutria	8	5.00	40
Miscellaneous			
TOTAL PELTED	192,761		2,711,375

Number of Live Animals Exported

Mink Standard	93	\$50.00	\$ 4,650
Mink Mutation	209	50.00	10,450
Chinchilla	219	40.00	8,760
Miscellaneous			
TOTAL LIVE EXPORTS	521		23,860
TOTAL EXPORTS	193,282		\$2,735,235

Special Permits were issued for 3100 rabbit pelts.

Number of Animals Retained

	1966-67	1965-66	1964-65
Mink standard	28,024	26,519	26,009
Mink Mutation	46,769	47,974	37,187
Chinchilla	10,066	8,786	7,403
Fox	42		22
Nutria	195	73	27
Miscellaneous	1		39
TOTAL RETAINED	85,097	83,352	70,687

Fur Farm Licenses

Kind of Animal	1966-67	1965-66	1964-65
Mink	224	249	249
Chinchilla	206	181	123
Miscellaneous	4	5	5
TOTAL LICENSES	<u>434</u>	<u>435</u>	<u>377</u>

Mink Pelt Production 1962-1967

Year	Total Pelts	Value
1966-67	190,691	\$2,686,591
1965-66	191,471	3,721,385
1964-65	186,181	3,009,066
1963-64	181,698	3,240,234
1962-63	156,189	2,577,110

REPORT OF THE WATER RESOURCES DIVISION

R. E. BAILEY, B.Sc., P.Eng., Director

W. SOLODZUK, B.Sc., P.Eng., Chief Engineer

Headquarters

BRANCH HEADS

I. Anderson, B.Sc., P.Eng.
 B. Boyson, B.Sc., P.Eng.
 E. T. Dean, B.Sc., Associate
 Chief Engineer
 R. K. Deeproze, M.Sc., P.Eng.
 D. G. Harrington, B.Sc., P.Ag.
 F. G. Primus
 J. L. Reid, B.Sc., P.Eng.
 L. D. M. Sadler, M.Sc., P.Ag.
 G. L. Steed, M.Sc., P.Eng.

BRANCH

Development Planning
 & Engineering Materials
 External Administration
 Design & Construction
 Hydrology
 Land Development
 Internal Administration
 Hydro-electric Development
 Soils, Geology & Groundwater
 Agrohydrology

Regional

1. Lethbridge.

N. S. Thompson, M.Ag., P.Ag. — Regional Director & Land Manager

SUPERVISORS

B. Beasley
 R. L. Francis, B.Sc., P.Eng.
 D. Graveland, M.Sc., P.Ag.
 J. McCracken, M.Sc., P.Ag.
 A. Pungor, B.Sc., P.Ag.

BRANCH OR SERVICE

Internal Administration
 Design & Construction
 Lab Services
 Soils, Geology & Groundwater
 Land Development

2. Edmonton.

W. Solodzuk — Acting Regional Director
 A. R. Strome — Regional Supervisor

3. Peace River.

E. T. Dean — Acting Regional Director

INTRODUCTION

Activities of the division in the P.R.I.M.E. program consisted of a consolidation and crystallization of concepts, including the assignment of priorities and evaluation of P.R.I.M.E. projects in relation to overall provincial, interprovincial and national water resources development. The Division Director's participation in meetings, symposiums, and committees under the sponsorship of the Canadian Council of Resource Ministers, as well as numerous other national conferences on matters related to water resources, provided for a greater depth and breadth of water resource development concepts upon which to base this evaluation.

INTERPROVINCIAL AND INTERNATIONAL ACTIVITIES

Prairie Provinces Water Board

In the 1966 Annual Report, it was reported that the provinces of Alberta and Saskatchewan were engaged in active negotiations under the auspices of the Prairie Provinces Water Board, regarding the apportionment of interprovincial waters. These negotiations were successfully concluded in a proposed agreement which was accepted in principle by the governments of both Saskatchewan and Alberta. The agreement does not become binding, however, until similar negotiations have been successfully concluded between Saskatchewan and Manitoba, and until such time as both agreements have been ratified by the federal government. The Chairman of the Prairie Provinces Water Board is currently requesting that the provinces of Saskatchewan and Manitoba begin discussions on the development of a proposal similar to that agreed upon between Alberta and Saskatchewan.

Although the Prairie Provinces Water Board was engaged in numerous other activities during the year, these were generally of a routine and uncontroversial nature, and the matter of apportionment may be considered as the most significant subject presently before the board.

No major problems arose regarding international streams. Some preliminary surveys were initiated on Sage Creek preparatory to anticipated rehabilitation of the physical works on this stream.

Water for Peace Conference

In May of 1967, an International Conference on Water for Peace, called by President Johnson and sponsored by the United States Government, was held in Washington, D.C. The conference was a "forum for the discussion of the water problems of people and nations. It was designed to permit a sharing of man's experience and ideas in identifying, defining, solving and planning to solve his water problems."

The manner in which the conference was called was anything but conducive to favourable reaction since no prior consultation was held with other countries or national and international organization. The intent behind such a world conference was not initially clear, and Canada viewed its invitation to attend with some skepticism, anticipating that the conference could lead to premature discussions, or even negotiations, regarding continental water. In addition, the conference schedule did not provide sufficient opportunity for adequate and proper preparation for participation.

Canada forwarded a recommendation to the United States suggesting a change in the character of the conference, and strongly recommended a change in the date to permit better opportunity for preparation. The United States did not accept Canada's suggestion stating that the problems associated with water and water development were so urgent, and the need for information in this field so imperative, that any proposed postponement could not be entertained. The United States further

suggested that Canada organize a North America regional session.

At a joint meeting of Canadian ministers it was agreed that Canada's non-participation would be diplomatically unacceptable. It was recognized that Canada's participation in the conference would have to be on an amalgamated federal-provincial basis in order to be truly representative. The following guidelines were therefore formulated:

1. Canada should participate in the conference.
2. Canada's participation should be restrictive and selective.
3. Canada would not enter into continental water discussions.
4. Participation at the conference would be limited to ministers and government officials, and there would be no participation by individuals outside of government.
5. The proposed regional session should be eliminated.
6. A federal-provincial national committee should be formed to prepare the presentations for the conference.

Accordingly a National Committee was appointed consisting of federal and provincial representatives. The Director of the Water Resources Division represented Alberta. All provinces in Canada with the exception of Prince Edward Island agreed to participate. The federal government also established a Conference Secretariat to provide communication with the parent Conference Secretariat in Washington.

Guidelines and information on conference agenda were sketchy, and by the time the Canadian committee became adequately advised in this regard, very little opportunity remained for the preparation of papers. It was anticipated that some 500 papers would be selected and published for the conference, and of these 100 to 150 would be chosen for oral presentation. How many papers were eventually submitted or accepted is unknown, but there would have been many hundreds. It is known, however, that the papers selected for oral presentation required seven tons of paper to reproduce.

In spite of time constraints, Canada did succeed in preparing 50 papers for consideration. Of these Alberta contributed six, all of which were accepted as conference papers. Five of the six papers were prepared by the Alberta Department of Agriculture, four of which originated in the Water Resources Division. The one non-departmental paper was prepared by Mr. W. R. Hanson of the Eastern Rockies Forest Conservation Board.

Alberta also enjoyed the distinction of being the only province from which a paper was selected for oral presentation. This was submitted by Mr. G. L. Steed, Head of the Agrohydrology Branch of the Water Resources Division.

In addition, Canada prepared a joint federal-provincial Country Situation Paper.

An exposition was held in conjunction with the conference. The theme chosen for the Canadian exhibition was "Man and Water". It was developed as an integrated national exhibit, portraying the various political regions of Canada. It emphasized Canada's technical skill in the water sphere, its co-operative nature, its boldness in developing imaginative projects, and its foresight in planning for the future. The exhibit was compiled by the federal government with the assistance and co-operation of provincial representatives. Mr. H. Martin of the Publicity Branch, Department of Industry and Development, contributed his efforts on behalf of Alberta.

The official delegation chosen to represent Alberta consisted of the Honourable H. E. Strom, Minister of Agriculture, Honourable H. A. Ruste, Minister of Lands and Forests, and R. E. Bailey, Director of Water Resources.

The conference agenda was divided into two areas, a Ministerial Session, and an "Expert" Session. Five sessions were conducted concurrently, each pertaining to a particular theme.

The conference itself was immense, attended by some 5,000 delegates from 97 nations and 21 intergovernmental organizations. It is doubtful if many of those attending were able to depart with any clear knowledge of what had been achieved. Hopefully, this will come later upon recollection of what was discussed and, more importantly, on re-reading those papers applicable to the individuals particular field of interest.

Eleven countries participated in the exposition, and it seems to be the general concensus of opinion that the Canadian exhibit was among the best.

Whether the conference itself was a success or not, it can be said that Canada's participation was a success. The 60 delegates attending, 30 from the federal government and 30 from the provinces, gave a good accounting of themselves and made a significant contribution to the proceedings. The approach made by Canada might be summed up in the following statement:

"The amount of water on earth is constant.

The amount of life depending on water is increasing.

Of all living things, only man has the intelligence to care and to act."

Perhaps an over-simplification, and yet perhaps pertinent and a good summation of what plagues the world's water experts, are a few words selected from President Johnson's address during the official opening of the Conference:

Of the glamour and the clamour

That attend the affairs of state

Seem to fascinate the people

And impress some folks as great.

But the truth about the matter,

In the scale of loss and gain:

Not one inauguration's worth

A good, slow two-inch rain.

Saskatchewan-Nelson Basin Study

Under the chairmanship of the Honourable Harry E. Strom, Minister of Agriculture, for the Province of Alberta, the Saskatchewan-Nelson Ministerial Committee held a historical meeting in Regina, Saskatchewan on October 16, 1967. On this date, an agreement was reached by the Canadian government and the three prairie provinces to initiate the technical study as recommended by the Technical Advisory Committee, at an estimated cost of \$5,000,000.00. The federal government will pay half the total cost and the three prairie provinces will share the remainder equally. The agreement permits the establishment of the Saskatchewan-Nelson Basin Board to supervise this study with members appointed by all four governments.

The Study Board consists of the following members:

Federal — A. T. Davidson, Chairman, Assistant Deputy Minister, Water Sector, Department of Energy, Mines and Resources.

M. T. Fitzgerald, Director of P.F.R.A.

Alberta — R. E. Bailey, Director, Water Resources Division, Department of Agriculture.

Saskatchewan — G. C. Mitchell, Executive Director, Saskatchewan Water Resources Division.

Manitoba — T. E. Weber, Director, Water Control and Conservation Branch.

Head office of the board will be in Regina, where its work will be carried out by a study director and staff.

The purpose, and events leading to the signing of this agreement are contained in the annual reports of 1963 to 1966 inclusive, and interested readers are referred to them. Briefly, however, the study now being launched was recommended by the Prairie Provinces Water Board because of increasing competition for water in the Saskatchewan-Nelson Basin. The board will be concerned exclusively with study and planning of projects to ensure the future development of adequate water supplies for the prairie region.

The following excerpt from the "Advisory Committee Report" outlines in general terms the scope of this study.

"The study of the surface water resources of the Saskatchewan-Nelson Basin and the practical means of developing these resources, must be approached with an attitude that treats the basin as a unit, irrespective of provincial boundaries or the nature of provincial jurisdiction. The study should be undertaken with the attitude that it is to be an engineering assessment, made from a purely technical viewpoint, using physical data that is measurable and quantitative.

It is suggested that the objective of the Study Board should be to compile a tabulation of alternatives from which selection may be made, which, together with consideration of prevailing economic and social circumstances, will best utilize the water resources of the basin to meet future needs as they arise or as they are anticipated. It should be recognized, however, that the

results of the study should be considered as preliminary, and should in no way be construed as representing a commitment on the part of any provincial agency or legislative body. It is anticipated that future additional studies and updating of information will be necessary, and interprovincial approval obtained, prior to construction or implementation of any works or projects suggested by the conclusions of the study."

INTERNAL ADMINISTRATION BRANCH

The Internal Administration Branch, besides providing major administrative services to the division, administers the Emergency Water Supply Policy. It was a fairly busy year and the following table shows the activities engaged in during 1967.

Town	No. of Gals. Supplied	No. of Feet of Pipe	Date Pumping Commenced	Total Days of Pumping
Waskatenau	2,000,000	1,000.00	March 23, 1967	14
Bremner	140,000	1,200.00	July 24, 1967	14
Nobleford	4,000,000	6,200.00	September 20, 1967	14
Viking	6,000,000	19,775.00	October 30, 1967	22
Faust	365,000	3,835.00	November 7, 1967	3

EXTERNAL ADMINISTRATION BRANCH

The External Administration Branch is responsible for the administration of legislation, financial programs, and property acquisition and control pertaining to water development and for the co-ordination of these functions at the regional level.

On October first, a Branch Head was appointed to direct the program of the branch, to assume duties previously undertaken by the Chief Engineer. In early December, the Branch Head was appointed to the Secretariat of the Irrigation Council. Many of the responsibilities of the Secretariat relative to irrigation development and to irrigation districts closely parallel existing functions of the branch.

Water Rights Section

A total of **144** applications for water rights were received and recorded in 1967. The distribution of these applications as related to drainage basin and purpose is shown in TABLE 1.

A total of **147** interim licenses for all purposes were issued during the year.

A program of microfilming water right plans began during 1967.

Irrigation Water Agreements

Water agreements between the Irrigation Districts and the water user are approved, registered and filed in this office. During the year the following water agreements were received:

Bow River Development (Federal)	68
Bow River Development (Provincial)	3
St. Mary and Milk Rivers Development	26
Eastern Irrigation District	34

TABLE 2 shows the major Irrigation Districts in Alberta and the areas that actually received water during the year 1966.

TABLE 1
APPLICATIONS BY DRAINAGE BASIN AND PURPOSE - 1967

Drainage Basin	Dom.	Mun.	Irr.	Ind.	Other	Total
Athabasca River	6	1	4	2		13
Battle Creek						0
Bow River	1	1	3	2		7
Churchill River			2			2
Endon Slough			2			2
Forty Mile Lake	1					1
Great Sandhills	1		1			2
Kindersley Lake	1					1
Lodge Creek	2					2
Manito Lake	5				1	6
Many Island Lake	2					2
McGregor Lake						0
Mackenzie River						0
Milk River	7					7
North Saskatchewan River	10	2	4	3	1	20
Oldman River	7		1		1	9
Pakowki Lake	2		1		3	6
Peace River			2	5	1	8
Red Deer River	21		18	4	8	51
Sevenpersons Creek						0
South Saskatchewan River	1		2			3
Sullivan Lake	1					1
Tide Lake	1					1
Wild Horse Lake						0
TOTALS:	69	4	39	16	15	144

TABLE 2
STATISTICS IN CONNECTION WITH THE MAJOR IRRIGATION DISTRICTS IN ALBERTA 1966

Name of District	Constructed Area	Receiving Water in 1966	Source of Supply
St. Mary & Milk River Development	177,118.0 Acres	165,000.0 Acres	St. Mary River
Magrath Irrigation District	8,506.0 Acres	4,000.0 Acres	All through the
Raymond Irrigation District	21,000.0 Acres	16,000.0 Acres	works of the
Taber Irrigation District	54,141.0 Acres	25,904.0 Acres	S.M.M.R.D.
Western Irrigation District	150,000.0 Acres	3,100.0 Acres	Bow River
Eastern Irrigation District	200,000.0 Acres	195,905.0 Acres	Bow River
Bow River Development (Federal)	94,000.0 Acres	35,972.0 Acres	Bow River
Bow River Development (Provincial)	25,000.0 Acres	4,451.0 Acres	Bow River
Mountain View Irrigation District	3,719.0 Acres	2,789.0 Acres	Belly River
Leavitt Irrigation District	4,523.0 Acres	4,523.0 Acres	Belly River
Aetna Irrigation District	6,672.0 Acres	2,523.0 Acres	Belly River
United Irrigation District	33,972.0 Acres	12,725.0 Acres	Belly River
Lethbridge Northern Irrigation District	89,747.0 Acres	19,196.0 Acres	Oldman River
Macleod Irrigation District		Not Operating	Oldman River
Ross Creek Irrigation District	2,069.0 Acres	1,050.0 Acres	Gros Ventre Creek
TOTALS	870,467.0 Acres	493,138.0 Acres	

GROUNDWATER SECTION

General

Administration of the Ground Water Control Act involves licensing of all water well drillers in the province and the collection and tabulation of completed reports on each well. Inspections are carried out relative to complaints, flowing wells and report submissions. Other duties of the section include field inspections of proposed subdivisions, industrial wells and municipal well development programs.

During the past year over 500 personal contacts were made with water well drillers in an effort to improve the quantity and quality of the well reports. All of the report submissions were forwarded to the Research Council of Alberta to aid in their groundwater studies.

A water well drillers directory was published and distributed to all drillers, all District Agriculturists and other interested people such as commercial firms and government agencies.

In the field of extension work, talks were given at nine water supply schools presented at various locations throughout the province. The programs were arranged by the various District Agriculturists for the benefit of local farmers and well drillers. A talk was also given at the annual Alberta Water Well Drilling Association Convention in the interests of education and better public relations.

A pamphlet entitled "Farm Water Wells" was published and nearly 5,000 copies have been distributed to farmers and water well drillers.

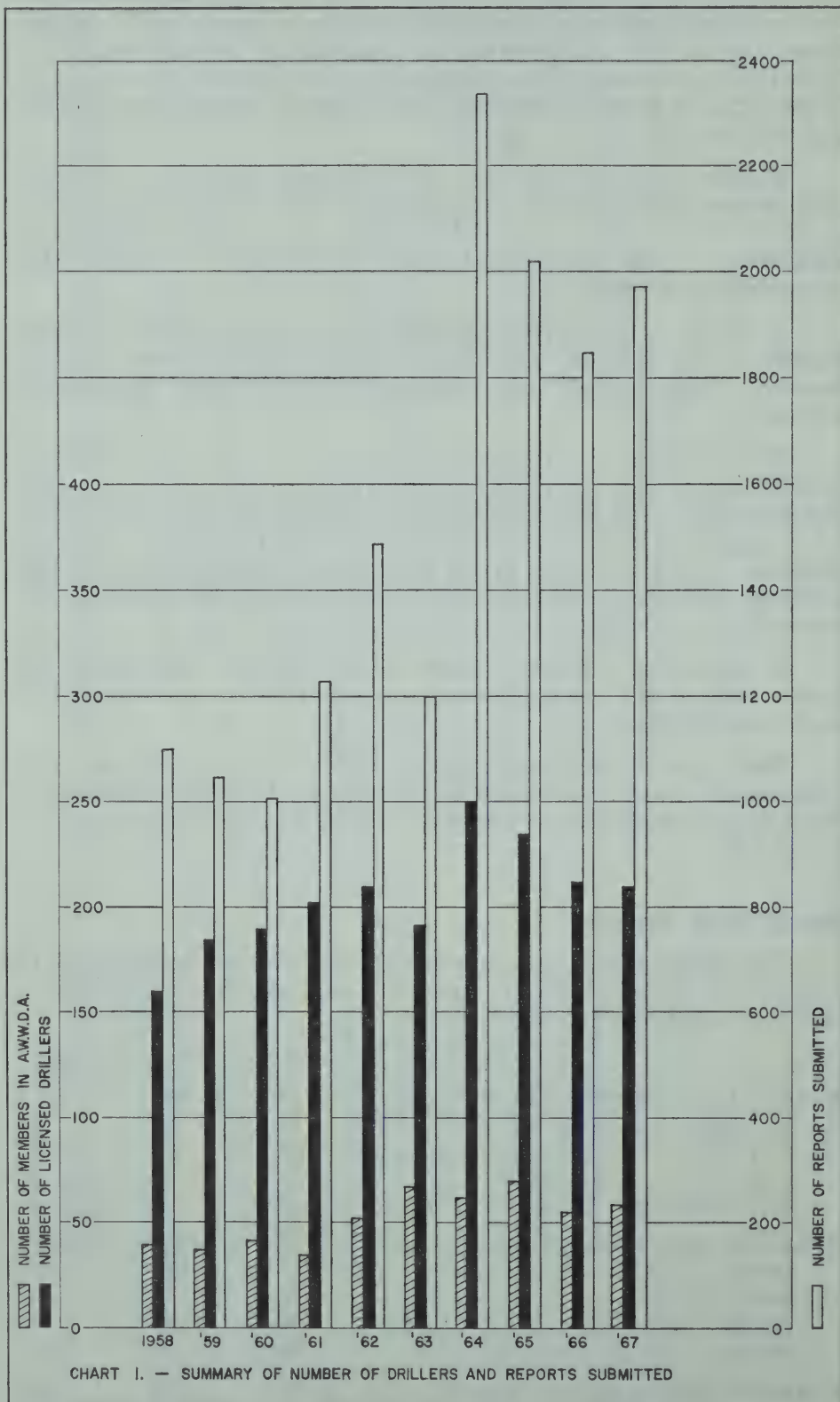
Two agricultural community water supply programs were completed under the Federal-Provincial-Municipal Emergency Well Development Policy. Both wells are located in Improvement District No. 11.

Water Well Drillers

The following is a summary of information relative to the water well drilling industry and shows a comparison with figures for 1965 and 1966:

	1965	1966	1967
Number of licensed water well drillers	233	212	210
full time	94	95	91
part time	74	78	59
occasional	57	36	54
out of business	8	3	6
Number of drilling rigs	282	250	239
rotary	123	120	111
cable tool	87	82	83
jetting	30	23	22
boring	42	25	23
Number of drilling reports received	2,020	1,850	1,970

Chart No. 1 summarizes the relation between the number of licensed drillers, the number of members of the Alberta Water Well Driller's Association and the number of reports submitted from drillers during the years 1958 to 1967 inclusive.



Hydrographic Survey

Six lakes were sounded which brings the total of 86 completions. The depths are drafted in the form of contour maps and are useful in determining storage capacities and also of interest in water conservation, recreation and industrial uses.

Geodetic Survey and Lake Levels

Permanent iron bench marks were set and elevations established at eight lakes. All elevations were based on geodetic data to conform with the Geologic Survey of Canada.

The level of most lakes in the province lowered between a few tenths to one foot. Lesser Slave Lake lowered approximately two feet from the previous year and is considered to be below a satisfactory level.

The following list of major lakes shows a comparison of 1966 median levels with those of the past four years:

	1963	1964	1965	1966	1967
Gull	49.55	49.38	50.46	50.23	49.43
Sylvan	71.77	71.42	71.32	72.60	72.08
Cooking	13.67	12.90	13.45	13.75	13.24
Buffalo	83.60	82.45	84.07	83.75	83.66
Wabamun	70.87	70.57	72.52	72.83	72.15
Lac Ste. Anne	98.20	97.37	99.80	97.85	97.20
Lesser Slave	93.59	94.77	96.33	94.00	91.86

Property Control Section

The principal function of this section is in the field of right-of-way acquisition. The work includes contacts, negotiations and completion of transactions relating to rights-of-way, easements, damage claims and public relations work during and prior to construction.

Section personnel are located in provincial headquarters and in the Lethbridge regional office.

Initiation of the P.R.I.M.E. program extended activities of the section, including acquisition of land for such projects as the Pembina River Dam, the Ardley Dam and the East Prairies River Diversion.

Control of reservations on Crown land for water development purposes also came within the purview of the section.

Negotiations continued for right-of-way for the Monarch Drain and for an extension to the Battersea Drain in the Lethbridge Northern Irrigation District.

Final plans were approved for the construction of the Stirling Drain in the Raymond Irrigation District and right-of-way negotiations almost completed. Presently negotiations are underway to obtain right-of-way for construction of the Magrath Main Trunk Drain and Spur Drain in the Magrath Irrigation District.

Work is progressing toward obtaining right-of-way on the Six Mile Coulee Drain, the Malloy Drain, and South Coaldale Drain in the western division of the St. Mary and Milk River Development.

Negotiations have commenced on the West Barnwell Drain in the Taber Irrigation District.

Contacts have been made with land owners for the construction of the Scandia Drain, the Countess Drain and the Bassano Drain in the Eastern Irrigation District.

Some negotiation has been made for the construction of the Yellow Lake Drain in the eastern division of the St. Mary and Milk Rivers Development.

The work of procuring rights-of-way and easements for tile drains and open drains in the St. Mary and Milk Rivers Development to overcome seepage problems and necessary procedures to procure rights-of-way for canals in the St. Mary and Milk Rivers Development and the western block of the Bow River Development continued at the same rate as the past year.

Irrigation Right-Of-Way

Right-of-way plans for the irrigations districts and for other purposes are processed and approved by this branch before proceeding to the Land Titles Office for registration. During the year the following right-of-way plans were registered.

St. Mary and Milk Rivers Development	38
Bow River Development	24
Lethbridge Northern Irrigation District	1
Taber Irrigation District	9
Other Purposes	6

Financial and Statute Operations

The financial assistance policy to local governments continued to be an active program. Drainage and flood control again was the primary objective with most of the projects situated in the north and central areas.

The costs of projects in improvement districts north of the 55th parallel were shared equally between this department and the Northern Alberta Development Council.

Several drainage projects within irrigation districts were undertaken under three-way agreements with costs shared among the department, local governments and the irrigation district.

The following table shows a summary of financial assistance given under the above policy since 1954:

Fiscal Year	Total Paid
1954-55	\$ 2,449.42
1955-56	10,566.19
1956-57	46,833.51
1957-58	54,616.48
1958-59	61,131.28
1959-60	31,130.95
1960-61	29,353.33
1961-62	21,554.24
1962-63	61,056.04
1963-64	107,243.07
1964-65	178,718.19
1965-66	159,131.98
1966-67	251,732.95
1967-68	90,459.36
..... (as of Dec. 1/67)	
Total	<u>\$1,105,976.99</u>

WATER POWER

North Saskatchewan River

Brazeau Dam — Further investigational work on the Big Bend Development which includes the Brazeau Dam was done in 1967. Some changes in the immediate program were made. It became clear that it was not feasible to build a spillway on the north side as it would not only be unworkable in itself, but could endanger the whole structure. It was, therefore, necessary to evaluate the whole concept, and it now appears that an all purpose spillway and chute on the south side of the main dam is the most feasible structure to build.

The spillway, however, would so improve the flood routing characteristics that in the late summer and fall it would be possible to reduce the freeboard now existing on the structures. Raising the main dam some two feet, building small structures in the Nelson Saddle and the north bank emergency spill area, and without any work at the outlet works, could increase the full supply level from the present 3164 to 3170. This would give some 60,000 acre feet additional storage and increase the total Brazeau storage to some 420,000 acre feet.

Number two unit with a capacity of 190,000 kilowatts was put into operation early in 1967.

Big Horn Site — Investigation of this site, located some 260 miles upstream of Edmonton, which places it 110 miles upstream of the point where the Brazeau River meets the North Saskatchewan, was continued in 1967, and further drilling will be carried out in 1968. A full cost report was presented in December of 1967.

Bow River

Preliminary studies and surveys including some foundation drilling were carried out in 1967 and a report of this progress has been presented for a dam downstream from Bassano. The site selected for preparation of cost estimates (termed Eyremore) lies along the northerly side of Section 13 and 14 in Township 18, Range 18, West of the 4th Meridian and is about 26 miles downstream from the existing Bassano Dam. This would be an earth fill dam with a crest elevation of 2604. The full supply level would be 2594, the same elevation as the present Bassano Dam, and would involve at least partial removal of the existing dam. It is estimated that 105,000 acre feet of storage would be available in a 14 foot drawdown.

Athabasca and Peace Rivers

No new work has been done on either of these rivers during 1967.

Vermilion Reservoir

It was decided to maintain this reservoir at full supply level during the winter of 1967-68 and endeavour to release storage before runoff in the spring of 1968.

HYDROLOGY BRANCH

The function of the Hydrology Branch is to provide information relative to the distribution and magnitude of surface water resources, including estimates of:

- (1) average yearly and/or seasonal values.
- (2) probable fluctuations.
- (3) frequencies of occurrence of events of the various elements of the hydrological cycle.
- (4) the effect of surface water flow on the surface of the earth.

Although primarily a source of information to other branches within the Water Resources Division, this branch does service related requests from private and corporate members of the public.

Active participation in provincial, national and international undertakings, for example the International Hydrological Decade programs, is an essential part of the total effort to provide better service.

Five major activities occupy the Hydrology staff:

1. Servicing requests for hydrological information.
2. Data collection and compilation.
3. River regime research and application.
4. Watershed research.
5. International Hydrological Decade program.

Data collection and research provide the background of information and experience essential to the proper carrying out of the prime function, i.e. providing hydrological information. Regular inter-branch seminars stimulate the development and exchange of ideas in this relatively young science.

Providing Hydrological Information

Such topics as the magnitude of floods to be expected along certain creeks and rivers, available water supply for towns or industries and hydrological factors involved in lake stabilization were covered in a series of 30 reports. Major studies included, among others, a detailed analysis of the June 1965 storm, flood control in the Pine Creek Basin, and probability estimates for flood levels through the city of Drumheller.

Data Collection and Compilation

This continuing aspect of the work has been described in previous reports. Such projects as this year's compilation of average stream flows in the South Saskatchewan Basin, a present work near completion showing annual flows for the whole province and studies now underway related to computer handling of hydrological computations attest to the significance of this aspect of hydrology.

River Engineering

A change from previous years' concentration on surveys of river channels to provide data for basic and applied research

to this year's emphasis on (1) investigations of man-made changes wrought in river channels and (2) detailed studies of bed load transport, marked a significant change in river regime research.

This year's application of river engineering assumed major proportions. Exhaustive reports, 15 in number, were written on such river problems as bank erosion and protection, sediment transport at proposed reservoir sites, effects of weirs, bridge constrictions, etc.

Watershed Research

The objectives of the Spring Creek Watershed research project were detailed in the 1965 report. Progress in providing access and initial instrumentation has been steady. Attention is now being directed towards the installation of equipment and detailed planning for groundwater flow studies on the basin. A bound report, "Spring Creek Watershed Investigation, Annual Report No. 1", is the first of a series of annual summaries of the year's activities, observations and practical results.

Preliminary plans have been laid for the establishment of a similar project in the Fort Vermilion area.

Involvement in other watershed research projects is an important part of this same function. The Hydrology Branch is concerned, to a certain degree, with six other watershed research projects, five of them in the mountain and foothills regions and one in irrigated land.

International Hydrological Decade Program

Provincial co-operation in the International Hydrological Decade is manifested in several ways:

1. Maintaining a two-way flow of information between hydrological researchers in the province and National I.H.D. headquarters.
2. Encouragement of co-operation among provincial hydrological researchers by way of meetings, seminars, and literature exchange.

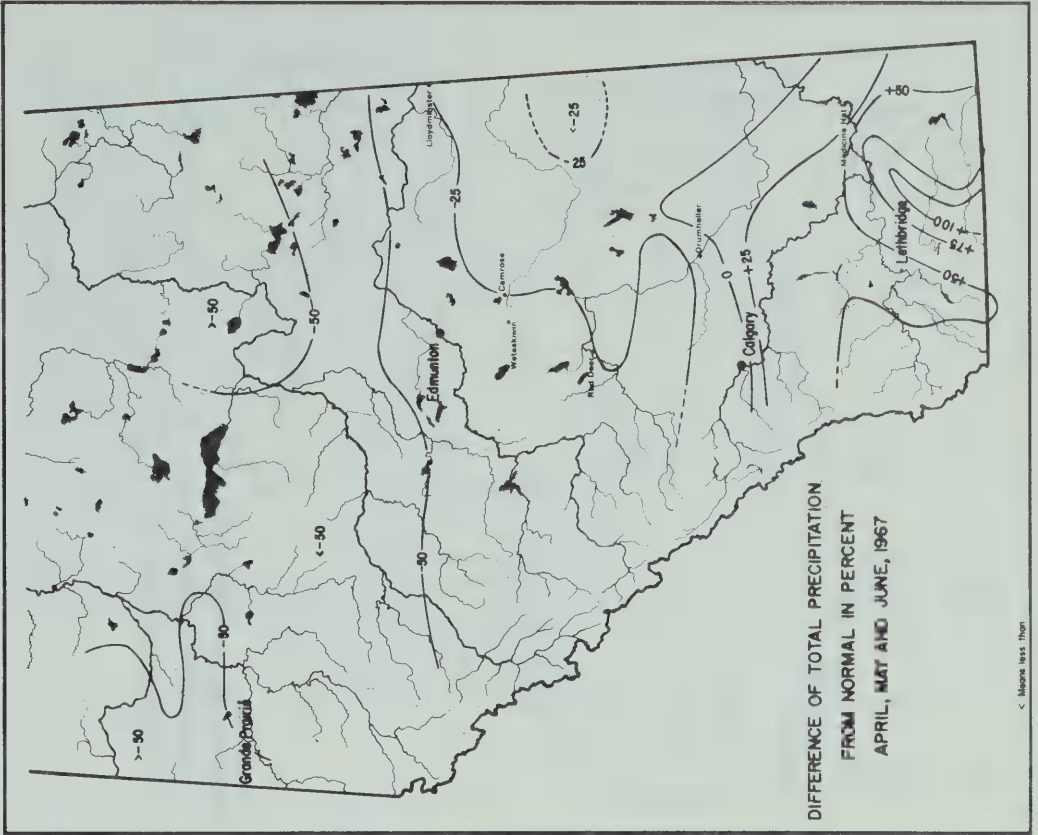
Precipitation

Precipitation for the year was near normal south of a line bending through Turner Valley, Strathmore and Medicine Hat. Exceptions to this occurred in the Manyberries-Bow Island area and the Waterton Lakes area where it ranged from 25 to 50% above normal due to a series of three severe spring blizzards. All of Alberta south of this line received at least 25% above normal precipitation in the spring but this figure reached 60 to 100% in the area including Milk River, Taber and Bow Island, and along the edge of the foothills from Mountain View to Stavely. Rainfall during the remainder of the spring and summer throughout Southern Alberta was generally low.

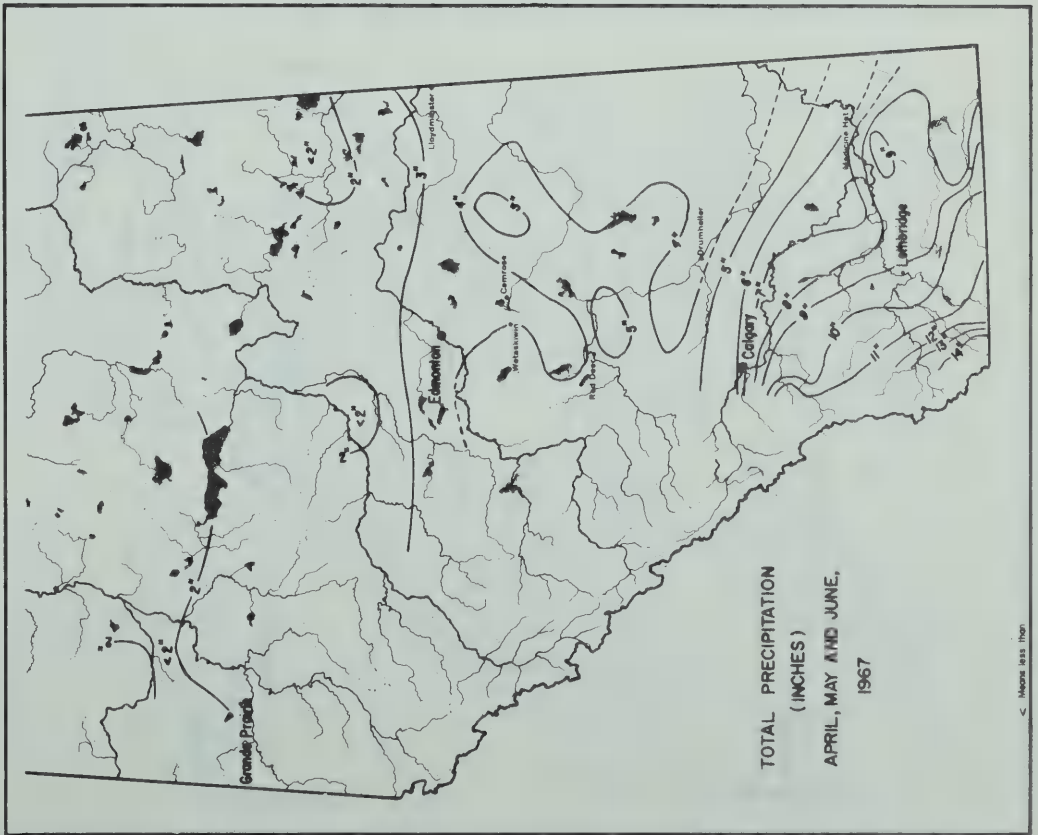
All the agricultural land north of Calgary received generally lower than normal amounts of precipitation during the growing season and in total for the whole year. A substantially dry spring

(50 to 75% below normal) was experienced within an 80 mile wide band through Edson, Whitecourt, Barrhead and Bonnyville and resulted in a low yearly total. The Viking-Stettler area was the only part of central Alberta fortunate enough to have received less than 25% below normal precipitation both in the spring and for the year.

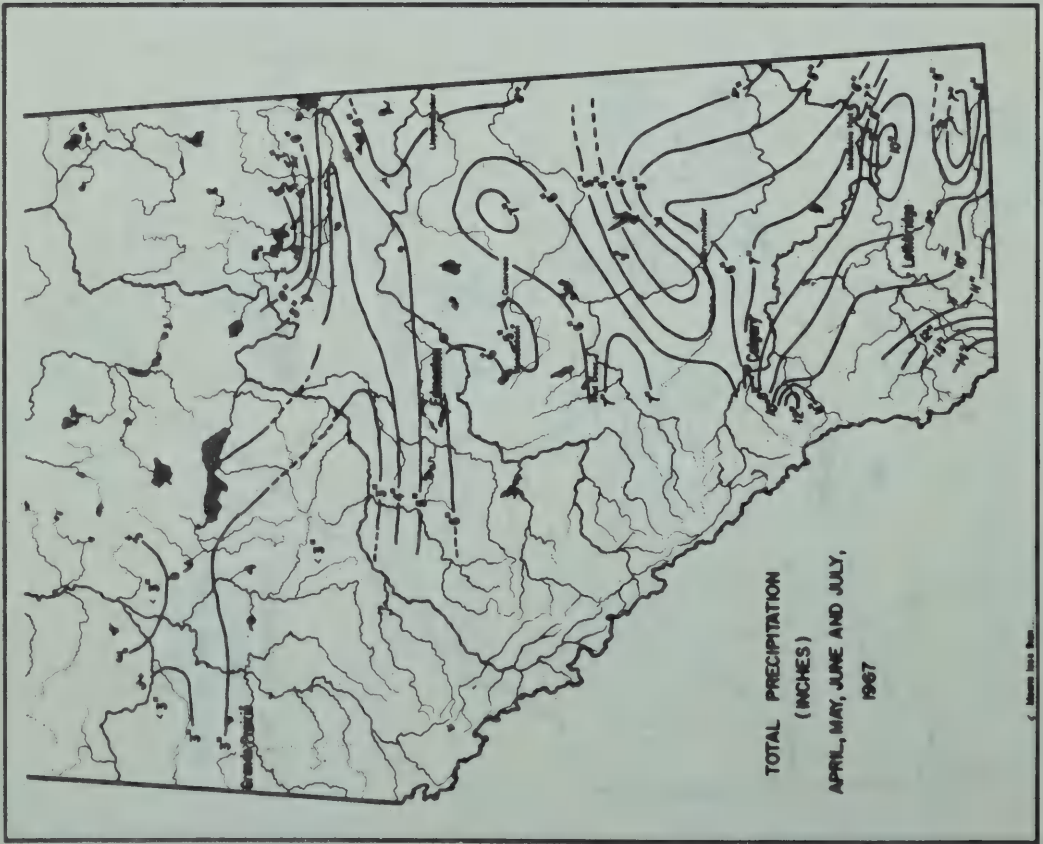
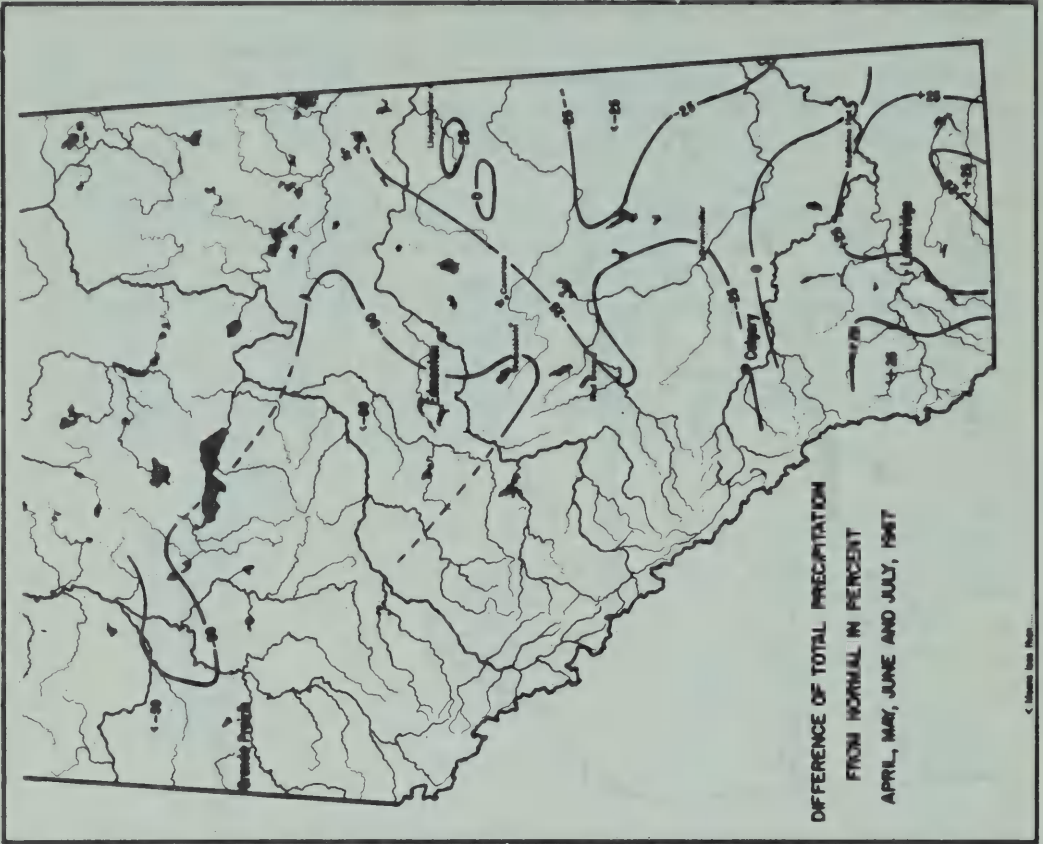
Once again the Peace River area suffered from very low amounts of spring and summer precipitation (50 to 65% below normal). However, such a large amount of snow had fallen in the winter that the total yearly amount of moisture received was not overly deficient. It varied from 10 to 20% below normal around Peace River, McLennan, Debolt and Rycroft to 30% deficient in the area through Beaverlodge, Grande Prairie and High Prairie.

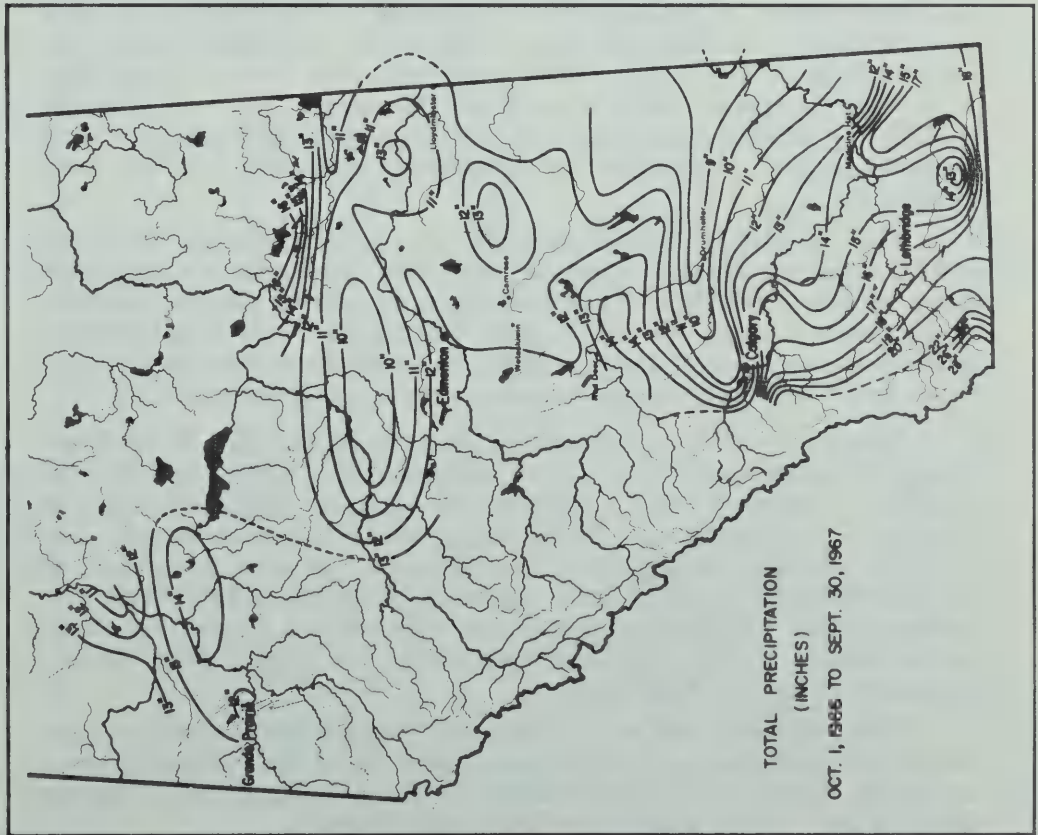
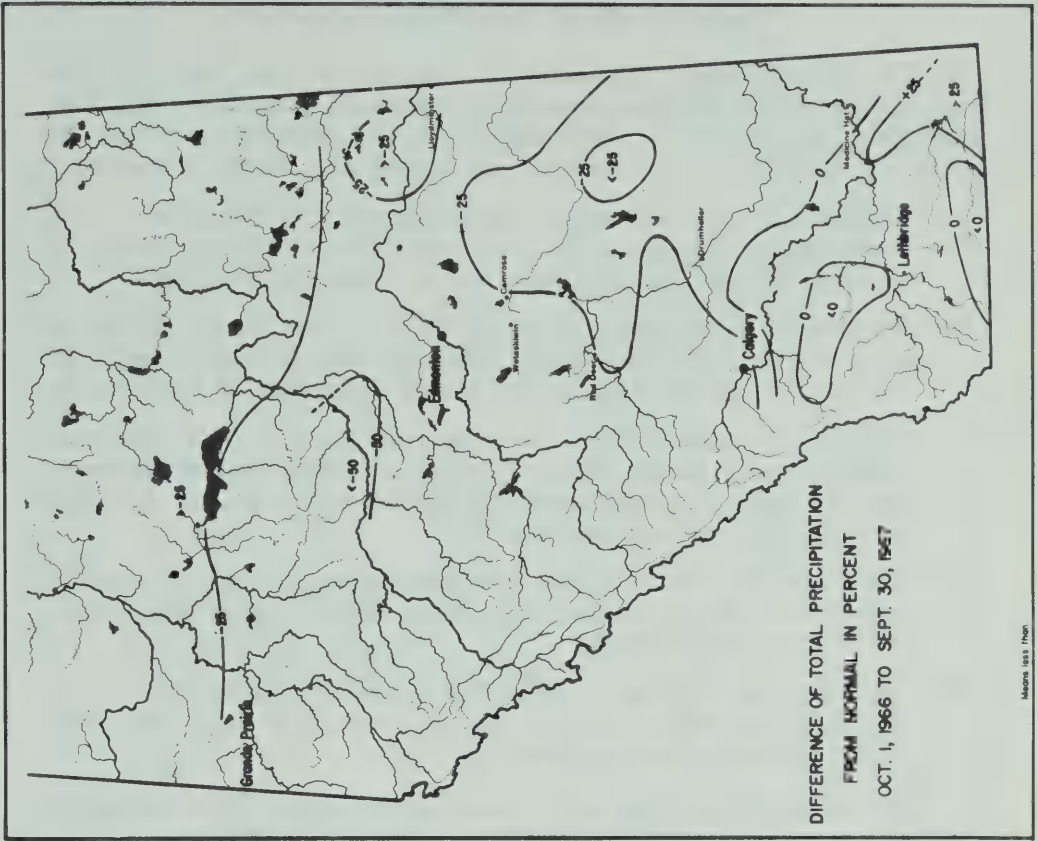


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DEVELOPMENT PLANNING BRANCH

The Development Planning Branch undertakes the initiation and investigation of new proposals designed to promote the conservation and orderly development of the province's water resources. The following areas of study are of primary concern:

- (1) Studies for the progressive development of a flexible, overall water plan designed to accommodate existing water resources projects with future water resource programs.
- (2) Studies for developing comprehensive river basin plans, on each of the major basins in Alberta, which will provide for the optimal utilizations of the water resources of each basin.
- (3) Studies to assure that the maximum social and economic benefits will accrue to the province from water resource developments as well from the use of water in the development of other natural resources.
- (4) Field studies for the location and investigation of specific projects to determine their characteristics in order that priorities can be established.
- (5) Co-ordination of the work of the branch with the work from other branches, necessary for the compilation of the final report on a proposed project.

Water resources planning requires the application of knowledge from the many disciplines involved in water resources development and the development of associated resources, plus an appreciation of the social and economic ramifications of such developments. While it is not economically feasible to have on staff such a wide range of professionals, this branch does provide the framework which enables the gathering and the co-ordinating of these professional skills within the branch, from other branches, from other governmental agencies, or from consulting firms.

With continued public and private interest being expressed in the development of our water resources, the branch's programs have received additional impetus for completion. Several studies in progress during 1966 have been finalized, while other studies have been advanced. In addition, several new proposals have been initiated, and are in various stages of completion.

Feasibility studies of various aspects of the Red Deer River Basin Development Project have occupied the greater portion of staff effort during 1967. Acquisition of new staff has allowed the South Saskatchewan River Basin study to be initiated. The purpose of this study is to determine the long term outlook of total water and related land resource developments in this important basin. Further studies were undertaken on several local water resource development proposals, including Pine Creek, Sturgeon River and Gull Lake.

The following table outlines the projects under active consideration together with a progress estimate of the various phases of study. This chart is applicable to the Development Planning Branch and the Engineering Materials Branch.

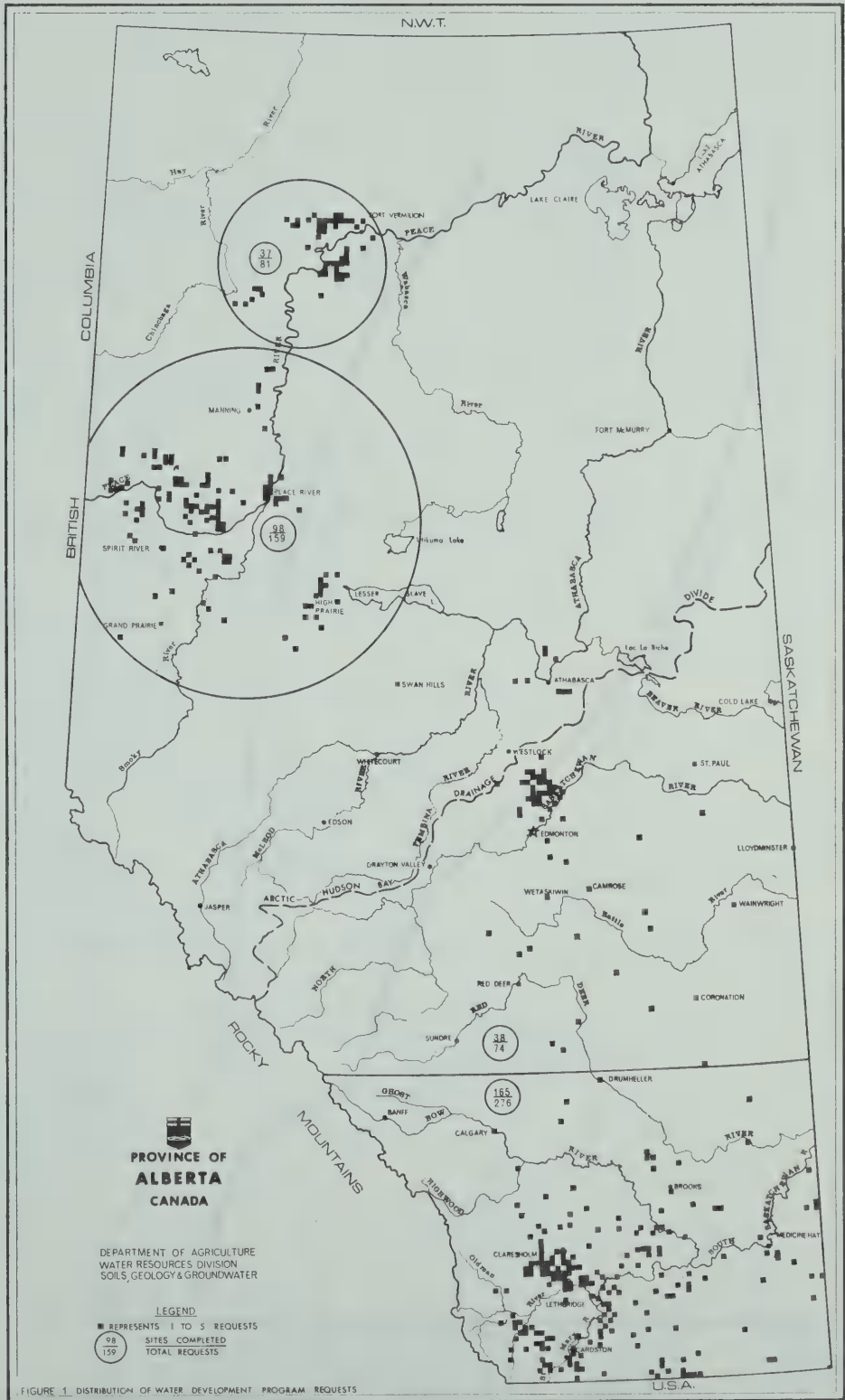


FIGURE 1. DISTRIBUTION OF WATER DEVELOPMENT PROGRAM REQUESTS

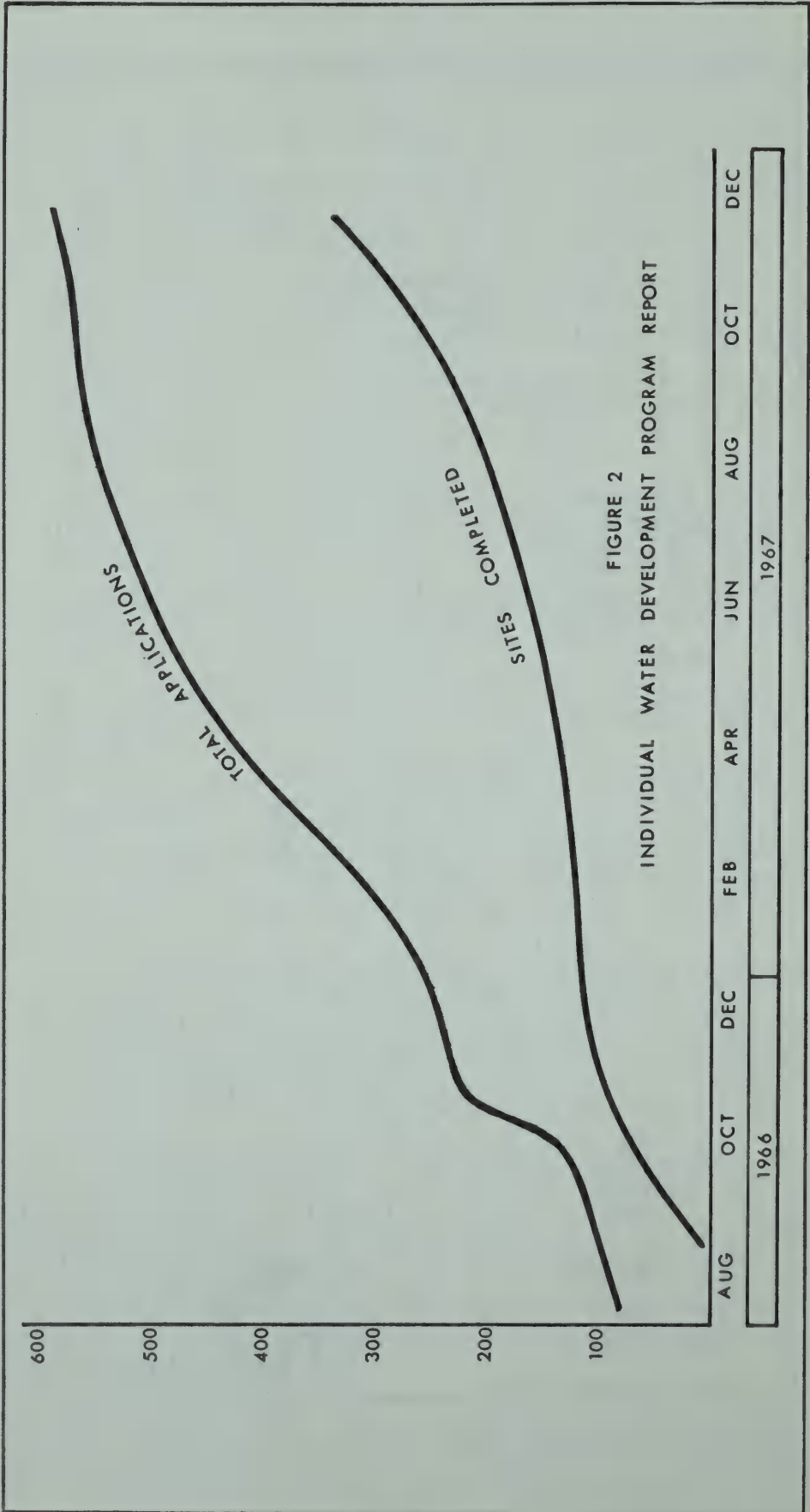


FIGURE 2
INDIVIDUAL WATER DEVELOPMENT PROGRAM REPORT

Summary of Activities for Development Planning and Engineering Materials, 1967

	Field Inspection	Ground Control	Contour Mapping	General Surveys	Geologic Study	Hydrologic Study	Preliminary Report	Overburden Drilling	Coring	Permeability Testing	Borrow Exploration	Laboratory Testing	Intermediate Report	Economic Report	Final Design
Pekiski Dam	0	0	X	0				0	0	50%		50%			
Jumping Pound	0	0	40%		85%	0		0	0	10%	5%				
Red Deer Cartier	0	10%					5%	0	0	0	10%	90%			
Content Bridge	0	X	X		0	0	0	0	0	0	0	0	X		
Bearberry	0	0	0	0	0	0	X	0	0	0	0	0	X		
Gull Lake	0	0	0	0	0	0	X	0	0	0	0	0	X	50%	
Clearwater Idlewilde	0	0	0	0	0	0	X	0	0	90%		75%	X		
Pembina	0	0	0	0	0	0	X	0	0	0	0	X	X		
Clearwater Gap	0	X	0	0	90%	0	5%	0	X	X	15%	75%	X		
McLeod	0	0	0	0	0	0	X	0	0	0	0	0	X		
Paddle River Sites	0	0	X	75%				50%				X			
Red Deer Main Canal	0	X	10%					5%		5%		5%			
Craig Lake	0	X						80%				75%			
Lesser Slave Lake	0	0												X	
Sturgeon River					50%										
Clearwater Diversion		30%					10%								
Ardley Site	X				15%				20%	20%	30%	5%			
Richdale Site								90%		90%	50%	60%			
Pine Creek	X					X	50%								
Horseguard Creek		X	40%												
Rocky Mountain House Site		X	40%												
Klein Lake								75%							60%
Vermilion River		X	10%												
Tail Creek Dam		X	X				40%	70%	85%	10%					
Threehills Creek	X				50%		60%								85%

Legend: X — completed 1967, 0 — completed prior 1967, — — not applicable, % percent completed

ENGINEERING MATERIALS BRANCH

The Engineering Materials Branch is responsible for the initiation and completion of a province-wide program of soils investigations, to supply information necessary for the design and construction of structures such as dams, spillways, diversion tunnels, outlet works, irrigation canals, and other related works. Soil investigations include:

- (1) Field reconnaissance surveys to determine the preliminary locations of dam sites and spillway sites.
- (2) Drilling programs designed to determine the foundation conditions of proposed sites.
- (3) Laboratory testing for the determination of the strength parameters of materials for use in foundation design.

Because of staff shortages, designs are to be carried out by utilizing both branch staff and consulting engineers. The construction of the Engineering Materials Branch will be responsible for the quality control of earth placement, and the instrumentation necessary for determining settlement, movement, or pore pressure build-up occurring during and after the construction of water resources projects.

The preceding chart outlines the progress to date on all projects investigated during 1967.

DESIGN AND CONSTRUCTION BRANCH

The Design and Construction Branch is responsible for all construction and design activity of this Division. The work of this branch includes the programming of all surveys and the preparation of design and construction reports on proposed projects in the various categories of irrigation, drainage, flood control, water development and conservation works. Regional projects are initiated and supervised through regions administered by regional directors and co-ordinated by provincial headquarters. Provincial programs are accomplished by provincial headquarters.

In the Edmonton and Peace River regions the major projects were those which were initiated under the financial assistance policy and the Northern Development Council. The following tabulations summarize these projects.

Summary of Projects Initiated Under the Financial Assistance Policy and Northern Development Council

Project	Location	Percentage Completed 1967
Bruner Complaint	ID 125	10
Boreen Project	ID 132	100
Bouchard	ID 132	90
Rieger Complaint	ID 132	100
Podruzney	ID 132	90
Morgan Drainage	ID 132	100
Deep Creek	ID 134	90
Fourth Creek	ID 134	85

North Manning	ID 138	100
Rabbit Creek	ID 139	100
Eureka River	ID 139	100
Bear Creek (Grande Prairie)	C 1	100
Harold Creek	C 1	100
Boisvert Drainage	MD 130	100
Blanchette Drainage	MD 130	100
Hegel Complaint	C 1	100
Woking Drainage	MD 133	100
Nordhagen	C 1	100
Chomiak Drainage	MD 130	15
Little Prairie Drainage	ID 131	15
Peoria Drainage	ID 132	15
Highland Park	ID 139	15
Debolt Creek	ID 126	15
Blimke Drainage Project	C 1	15
Valhalla Lake	C 1	15
Deadwood Drainage Project	ID 138	15
Belloy Flood Control Project	ID 132	10
Hamelin Creek Drainage	ID 134	10
Dapp Creek Flood Control	MD 92	95
Neerlandia Drainage	C 11	65
Foster Drainage	MD 92	100
Linaria North Flood Control	MD 92	75
Amisk Creek Erosion and Flood Control	C 9	100
Minnie Lake	MD 87	100
Jackfish Creek	MD 87	70
Muriel Creek	MD 87	95
Tomahawk Creek	MD 84	100
Berube-Jeske	MD 90	100

Approximately 25 other projects were at some stage of investigation, survey or design and not listed individually in the above summary.

SUMMARY OF PROVINCIAL PROJECTS

Project	Location	Percentage Completed 1967
East Prairie River	ID 125	100
West Prairie River	ID 125	45

Some special projects were carried out for the Department of Municipal Affairs and other agencies and are listed below:

- Town of Barrhead Water Supply
- Westlock Water Supply
- Debolt Water Supply
- Worsley Water Supply
- Schuler Water Supply

During 1967 the Lethbridge design office did considerable planning and design work for drainage projects to be constructed by Water Resources or under the Alberta Water Control Assistance Program.

About ninety miles of trunk and spur drains, to drain eighty thousand acres were designed for the consideration of the Drain-

age Committee on behalf of several local, municipal and irrigation authorities.

This work was planned for the Eastern Irrigation District and Newell County, St. Mary and Milk Rivers Development and Forty Mile County, Taber Municipal District, Lethbridge County, Warner County, Willow Creek, Cardston Municipal District, Lethbridge Northern Irrigation District, Taber Irrigation, Magrath, as well as the towns of Granum, Claresholm, Raymond, Magrath, Coaldale, Barnwell and Burdett.

Inspection, planning and design of repairs, maintenance and relocation were carried out for the United Irrigation District, Lethbridge Northern Irrigation District, St. Mary and Milk Rivers Development and the Mountain View Aetna Main Canal.

Inspection and consulting work was carried out on water supply problems for Cardston and Taber, erosion control problems for Alberta Parks Division and Crowsnest Pass communities, water development proposals of Ducks Unlimited, water users groups, Fish and Wildlife Division and others.

An exceptionally late spring, including the record breaking snow storms of late April and early May, delayed construction considerably in the Lethbridge area. However, a very dry summer provided for an excellent construction year for the remainder of the season.

Approximately 2.9 miles of polyethylene lining in the Taber Irrigation District and 2.0 miles in the east — S.M.R.D. and preparation of about 4.0 miles of canal for future lining were completed during 1967. About 4,000 feet of slip form concrete lining was also completed in the Bow Island plots.

About 4.2 miles of canal deepening and relocation, 5.1 miles of tile drains and 5.2 miles of open drains, 16,000 feet of culvert and 8 main canal turnouts were completed in the latter two districts. In addition, ninety precast structures were fabricated in the Grassy Lake shops for use in various areas.

Survey crews working out of Grassy Lake completed about 560 miles of survey in 1967 which includes survey for construction, preliminary investigation as well as drainage survey for the County of Forty Mile and the Municipal District of Taber.

Investigation, preparation of plans and construction of three large trunk drains, at Scandia, Bassano and Countess, were completed in the Eastern Irrigation District this season. Also, the Rolling Hills drain, started in 1966 was completed this past spring.

About 2700 feet of plastic lining was installed at the Horticultural Station as well as 2000 feet in the Rolling Hills area. Survey crews in the area completed 115 miles of survey for investigation and construction as well as 25 miles of drainage survey for the county.

Construction in the Lethbridge Northern Irrigation District continued with the completion of about five miles of new drain. Work was undertaken on extending the Battersea Drain as well as repairing the outlet end which was damaged by the abnormal

runoff in May. Engineering and survey assistance was provided to the L.N.I.D. for lateral relocation, irrigation and drainage problems as well as renovation and repair of the main headworks.

Construction started on the Six Mile Coulee drain for the western S.M.R.D. with about five miles of the ten mile project being completed for 1967. A major structure for this drain was the spillway into Six Mile Coulee which consists of 800 feet of buried 48 inch diameter concrete pipe. Projects such as the Malloy Drain and the South Coaldale Drain were partially completed during the year.

The Stirling Main Trunk Drain in the Raymond Irrigation District was undertaken and completed this year.

Most of the construction carried out this year in the Bow River Development — western block, concerned drainage and seepage control. About 3 miles of ditch was lined with polyethylene with an additional 3 miles prepared for lining in the spring of 1968. Two miles of open drain, 1600 feet of tile drain and two miles of lateral deepening were carried out to control and handle seepage.

Further work was required on the Lost Lake Pump and outlet canal and included cleaning out of about 4500' of canal. The extremely heavy spring runoff created a high lake level; however; the successful and continuous operation of the pump until December lowered the lake level approximately three feet from its peak.

Investigations, surveys, plans and estimates were prepared for the Snake Lake Drain, the Warner South Drain and the Forty Mile Coulee study. Additional investigation and reports were prepared for the Red Deer Lake Drain, the Taber Town Water Supply, the Hamlet of Etzikom Water Distribution System, the Outpost Lake Water Stabilization as well as numerous local drainage problems.

LAND DEVELOPMENT BRANCH

In 1967 the Land Development Branch became involved in a broader sphere of activities. The major work in the past has been irrigated land development, and land classification. With our new association with the Water Resources Division throughout the province, we are able to apply proven development techniques and knowledge to other phases of land development such as surface drainage and land use planning. It has been possible, because of the co-operation extended by division personnel, to do this with no additional staff. One professional position has been advertized for the Edmonton region, but as yet is not filled.

Due to the reorganization of our division, D. H. Harrington was moved to Edmonton as Branch Head and Mr. A. Punjor moved to Lethbridge as Regional Supervisor. Mr. R. Moore joined our staff on September 20, 1967 to replace Mr. Pungor at Vauxhall.

During the early part of August, Messrs. Hartman, Wilde and Noreika took part in a one week tour of irrigated land in southwestern Montana and southern Idaho. The purpose of the tour was to view the latest developments in automated water

control structures and irrigation systems. A report is being submitted.

Farm Surface Drainage Policy

Opening of new lands plus the increased intensification of farming operations of old lands, has always aggravated the natural conveyance of surface runoff water. Road building projects, land clearing, and farming operations, alter drainage discharge patterns causing erosion and flooding to varying degrees.

With the responsibility of farm surface drainage transferred from the Extension Division to the Water Resources Division, a policy has been developed whereby requests for farm surface drainage are handled by District Irrigationists and District Agriculturists. The procedure consists of signing an application form at the D.A. or D.I.'s office. In the case of the D.A., after preliminary screening the applications are forwarded to the Water Resources Division where inspections, surveys, and designs are scheduled and completed. Providing the farmers involved are agreeable to the proposed design, a form of consent is signed by the farmers granting permission to construct, operate, and maintain the scheme according to the plan. Upon completion of construction the Water Resources Division will inspect and approve the works if constructed as designed. Formal approval is shown on the form of consent and filed together with the application and plan, with Water Resources Division. During preliminary stages of this program, we have received excellent cooperation from District Agriculturists and division personnel. We have received **248** applications of which **190** have been inspected and **106** surveyed.

As a result of our new policy, it was first necessary to co-ordinate our program within our division, the Extension Division, and the P.F.R.A. Initial contacts and discussions have been carried out pertaining to (1) the relationship of the program to the Water Resources Act, (2) procedures to be followed, and (3) co-ordination with the P.F.R.A. A meeting was held in Calgary with Mr. R. Whitton, P.F.R.A. Superintendent of Water Development Services, Regina; Mr. G. Evans, P.F.R.A. Regional Supervisor, Water Development Service, Calgary, Mr. W. Solodzuk, Chief Engineer; Mr. B. Boyson, Branch Head of External Administration; and Mr. D. Harrington, Branch Head of Land Development, all of Edmonton. Programs of both agencies were discussed with a view to co-ordinate the efforts of each to everyone's advantage. It was tentatively decided that where farm surface drainage was involved, requests that come to P.F.R.A. offices would be forwarded to the closest District Agriculturist's or District Irrigationist's office for inspection and scheduling. However, the P.F.R.A. would supply technical assistance to farmers as requested by the Water Resources Division. This procedure will be tried and appears it will be of advantage to both agencies because it keeps the licensing and planning aspect of surface drainage with the province, and at the same time, permits the continued use of P.F.R.A. trained personnel, and last but not least, provides a co-ordinating procedure that will prevent duplication of staff and services.

Land Use

During 1967 the branch was involved with the co-ordination of water resources information on the following committees: Land Utilization Technical Advisory Committee; Provincial Grazing Reserves Technical Advisory Panel; A.R.D.A. Project 28031 Advisory Committee.

Close contact has also been maintained with the Land Use Specialist in the Department of Lands and Forests through this branch, in co-ordinating our respective activities. Preliminary inspections have been completed. Our Design and Construction Branch are presently preparing preliminary design and cost estimates for six townships which are being considered for homestead sale in the future.

Red Deer River Project

Topography classification to investigate the suitability of lands for irrigation was completed on 988,640 acres. This information is being combined through the Development Planning Branch with soils, design, and economic data in the preparation of a preliminary report.

Land Levelling

As a result of an unusually wet spring we were unable to do much land levelling before June. Consequently the spring land levelling work had to be postponed until after harvest.

The prospect of another good year encouraged many farmers to crop most of their acreages, resulting in a slow demand for land development during the summer. However, this apparent lag was made up for during the fall, when the open weather conditions prevailed right into December.

There was a shortage of contractors for land levelling throughout the season and this resulted in somewhat less acreages of land levelled compared to previous years.

During the year of 1967, 397 applications were received for land levelling and surface drainage services, which resulted in 15,856 acres of surveying and designing. Earthmovers completed 8,231 acres of land levelling which represents an expenditure of \$432,128.00 by farmers.

Border dyking operations were lower than normal, with 493 acres completed, due to the late spring.

Land Levelling Trust Account

Total revenue for the year amounted to \$76,162.02 with charges (less depreciation) \$44,054.49, thus leaving a surplus of \$32,107.53 to cover depreciation and interest.

The account experienced a very favourable year due to good weather conditions during the major part of the season and minimum amount of time was lost due to breakdown of equipment repairs.

In addition to the two twin Euclids, a 1159 Case crawler tractor was purchased, with an earthmoving scraper to facilitate

those conditions where heavy rubber tired equipment could not continue to work.

Since 1957, a total of \$66,000.00 has been repaid to the Provincial Treasury, leaving a balance of \$38,166.56 owing. The original amount advanced by the Provincial Treasury was \$92,-211.01 in 1957 and this is being paid back at the rate of \$10,-000.00 per year.

In 1967, the cost of operation was less than in 1966 thus leaving considerably more surplus. The cost of earthmoving to clientele averaged from (14) to (16) cents per cubic yard of earth moved which creates a good comparative position to private contractors.

Sprinkler Irrigation

It is evident that there is a continuing trend to increase the number of sprinkler systems operating in the Lethbridge region. Some of the reasons are:

- (a) Shortage of available irrigation labor.
- (b) Labor saving advantage of the new wheel-move systems.
- (c) Availability of natural gas and electric power for pumping.
- (d) More adaptable to the smaller streams available in older irrigation districts.

Improvement of the existing sprinkler systems as far as capacity and adequacy is concerned is still desirable in most cases.

Irrigation Gauge

The extension phase of the Irrigation Gauge program was taken over by our branch this year. This included recording and reporting evaporation, calculating and reporting moisture use by different crops, and forecasting irrigation timing on a collective and individual basis.

The increased use of the program was attained by individual attention. A joint meeting with all the subscribers is planned at each district during the forthcoming winter to discuss and evaluate the program. There were 99 subscribers in 1967.

Surface Drainage

Many of the requests received this year were for surface drainage surveys. The experience last spring of above normal moisture has shown the value of levelled land as far as drainage is concerned. Some irrigation farmers are interested in levelling for drainage just as much as for application or irrigation water.

There has been a definite increase in time spent on the new "Farm Surface Drainage Program". A good many of these attributed to the large amount of spring runoff and the problems resulting from inadequate surface drainage design.

Water License Inspections

Involvement in individual water licenses is increasing to the point where more of the professional staff's time will have to be

spent on making inspections. The writer wishes to emphasize the importance of these inspections before issuing the license not only from engineering but agronomic viewpoints.

Land Classification

Classification inspections were made on 281 parcels through requests for topography appraisals from irrigation districts. This information is used to determine suitability and feasibility of land for irrigation purposes.

Major feasibility studies were conducted and reports compiled on the following:

1. The Blood Indian Reserve.
2. East Warner Tract.
3. Foremost — Pakowski Lake.
4. Raymond Extension.

Extension

Field days were organized in co-operation with the District Agriculturist to demonstrate the practical advantages in the technology of irrigation practices. Some of our special projects for demonstration had to be curtailed due to wet spring conditions; however, our professional staff concentrated more on short courses and TV appearances during last year. Participation in the field of extension adds up to 83 events, an average of 14 per individual.

STATISTICAL SUMMARY

I	Land Levelling	
	1) Number of applications received	397
	2) Total Acreage of Engineering Surveys	15,856
	3) Acres per designs	14,237
	4) Number of parcels levelled	223
	5) Total acreage land levelled	8,231
	6) Average cost per acre (@ .18c per cu. yd.)	\$52.50
	7) Number of land levelling reports prepared (L1)	160
II	Farm Irrigation Systems.....	
	1) Number of water control structures installed	130
	2) Number of acres border dyked	493
	3) Number of acres corrugated	315
	4) Number of sprinkler investigations & designs	21
III	Topography Analysis for Land Classification	
	1) Number of quarter sections investigated	281
	2) Number of topography reports prepared (S2)	50
	3) Number of land classification surveys	34
IV	Inspections	
	1) Farm visits and field inspections	1,544
V	Reports (Major)	21
VI	Extension Participation	
	1) Meetings, Field Days, Demonstrations, Short Courses, Irrigation Schools, and TV Appearances	83
VII	Miscellaneous Surveys	
	1) Other than land development	398
	2) Surface drainage survey	158
VIII	Administrative and Office Duties	
	1) Number of office interviews	1,258

SOILS, GEOLOGY AND GROUNDWATER BRANCH

A significant broadening of the terms of reference for branch activities continued in 1967. Investigations have included a variety of problems which are difficult to categorize but in which the branch has become involved due to background and experience of professional staff. Such projects include surface and groundwater pollution by oil products, studies of groundwater discharge areas for irrigation and fish hatchery use and various special construction problems encountered by contractors, consultants and other government agencies.

The Domestic Water Exploration Program continue to draw considerable attention from farmers. The addition of a new exploration drill in the branch has materially contributed to eliminating much of the backlog. One result of working with the above program and the Groundwater Inventory Program, is the obvious necessity of a review of groundwater and well drilling regulations in the province.

A drainage study of the Lethbridge Northern Irrigation District was completed in co-operation with the Agricultural Economics Division and the Design and Construction Branch, for the Irrigation Policy Committee. The major objectives of the study were to delineate seepage affected areas, to determine remedial measures necessary, capital cost of such measures, and annual operation and maintenance costs of facilities.

In order to provide more complete liaison with various outside agencies, support direct communication at the headquarters level, and to improve services in the north, the Branch Head and Groundwater Engineer were transferred to Edmonton in July of 1967. At the same time, the position of Regional Supervisor was established in the Lethbridge region to provide supervision and continuity for those programs specific to southern Alberta.

New professional staff hired during 1967 were: G. M. Greenlee, Soils and Drainage Agrologist, G. L. Nielsen, Hydrogeologist, M. E. Chase, Photogeologist and M. Neyestani, Drainage and Groundwater Engineer.

Several additional programs and projects have been undertaken and assigned at the headquarters level. These are discussed fully in succeeding pages. The above programs plus those already established are directed from the headquarters level for all portions of Alberta except the area under the Lethbridge region. As staff proficiency reaches an acceptable level, assignments to northern and central regions will be made from headquarters and Lethbridge staff resources.

Drainage Investigations and Designs

Drainage investigations and designs for groundwater and seepage control during 1967 were made primarily for the eastern division of the St. Mary and Milk Rivers Development, for the portion of the Taber Irrigation District constructed in conjunction with the S.M.R.D., and for the Bow River Development west block. These are the most recently constructed irrigation projects in Alberta. Services to other irrigation projects were available on

a request basis. The Lethbridge Northern Irrigation District made use of the services of the branch for investigating soil characteristics on proposed canal relocations and investigation of seepage damage claims. Delineation of affected areas and report preparation for Public Utilities Board hearings is a service available to all irrigated areas.

Investigation of soil formations prior to outlet drainage construction is an important service accomplished in co-operation with the Design and Construction Branch. Frequently, local high groundwater conditions can be remedied by adequate design provided by such investigations; side slopes and gradients can in many cases be adjusted to ensure minimum operation and maintenance costs and maximum effectiveness.

Soils Investigations for Land Classification

Investigations to determine suitability of soils for irrigation were made on request in all irrigation projects. In the newer districts, the service was mainly a review of soil types and specific soil problems, whereas, in the older districts where salt and seepage affected areas are generally much more severe, the major function of the service was the delineation of affected areas.

Two major soil classification investigations were conducted; one being the Pinhorn Grazing Preserve. The second one is described in detail as follows:

Red Deer Development Project

The Red Deer River Development Project is tentatively defined as that tract of land lying between the Red Deer and Battle Rivers on the south and north, and the Saskatchewan boundary and Range 15 on the east and west. The total area of the block is approximately seven million acres. Future proposed development of the waters of the Red Deer River require knowledge of the irrigation potential of the soils. Investigations on 53,500 acres were initiated in May 1967. Eleven investigational sites were selected on the basis of preliminary helicopter inspections.

The procedure adopted consisted of shallow and deep drilling, hydraulic conductivity tests, groundwater studies and laboratory analysis. This degree of detail is in keeping with standards for final soil classification. Results will be used to determine future study requirements.

STATISTICAL DATA

Water Table Wells Installed	35
Soil Samples Taken in the Field	4,511
Holes Drilled to 5'	1,258
Holes Drilled to 15'	83
Holes Drilled 15' to 30'	103
Hydraulic Conductivity Test — Wells	82
Hydraulic Conductivity Test — Rings	108
No. of Parcels Classified	334 (53,500 ac.)

Applied Research

Applied research projects related to drainage, salted land and high groundwater problems were continued in the Magrath

and Medicine Hat Districts. A paper, based on the Medicine Hat tile interceptor drain study was presented at the joint Canadian-American Society of Agricultural Engineers meeting at Saskatoon in June. Both projects will be continued in 1968 in order to obtain additional and continuing data on performance.

Research was initiated on an area near Taber underlain by shallow bedrock, to determine the efficiency of lined and unlined mole drains in reclamation of salted soils. This is a joint project with the Canada Department of Agriculture, Research Branch.

International Hydrologic Decade

The Lethbridge Regional office has responsibilities in two International Hydrologic Decade projects. These are on the Irrigation Study Basin, and a Study of the Effect of Irrigation on Shallow Groundwater.

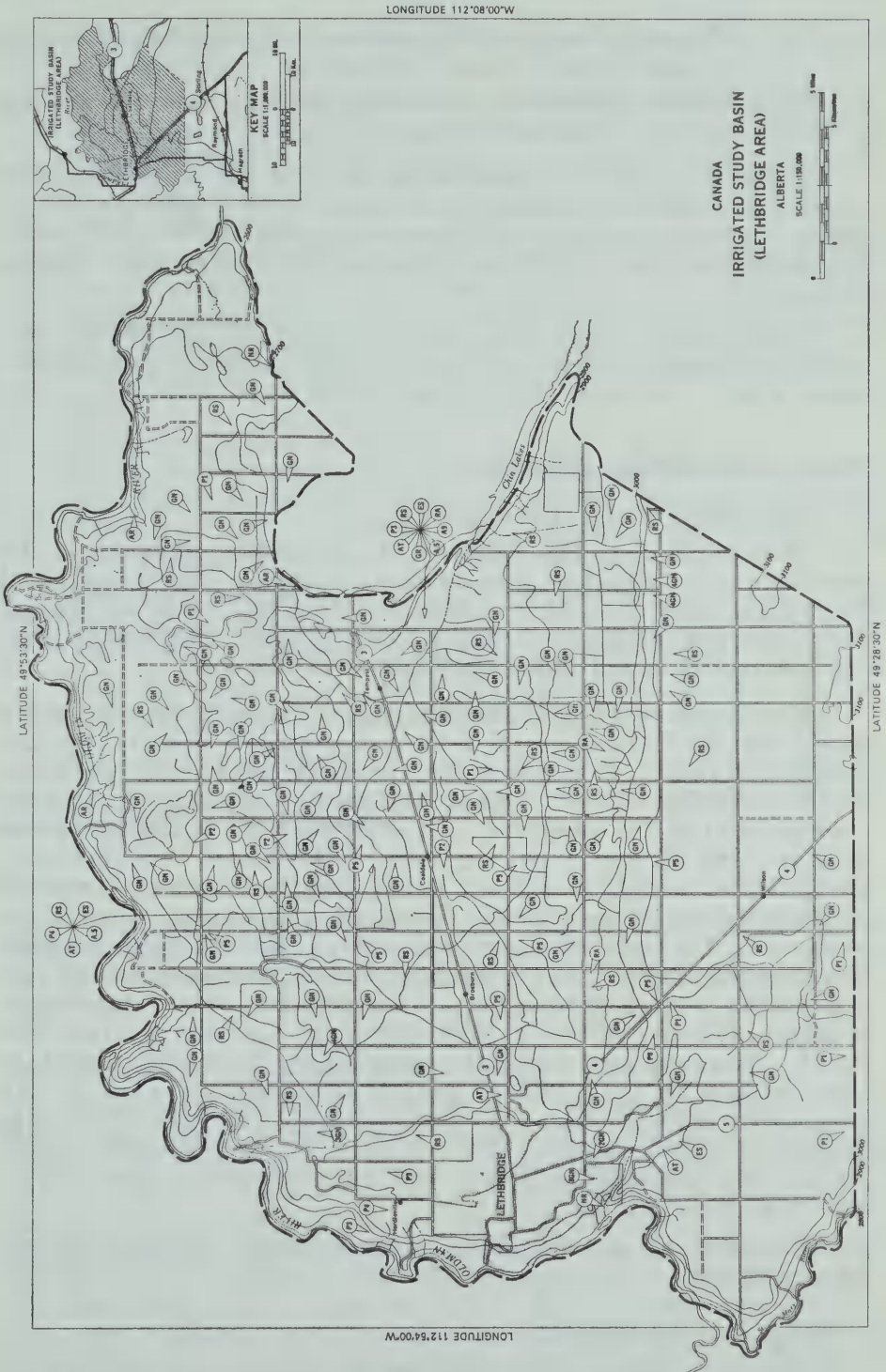
Monitoring shallow groundwater throughout southern Alberta was continued with the primary objective of determining the effect of irrigation on shallow groundwater under variable soil, topographic, bedrock and irrigation practices.

Although the International Hydrologic Decade commenced in 1965, ten years of records have been compiled to date. Plans call for computerization of data from selected sites. Data from well over two thousand installations is available.

Work continued in the geological and groundwater studies of the Irrigation Study Basin at Lethbridge. This year \$20,000 was spent in drilling a grid of deep test holes throughout the entire basin. In addition to revealing much about sub-surface geology, the drilling has helped delineate groundwater sources. Most available groundwater occurs near the surface as a result of irrigation infiltration, and in bedrock.

Deep drilling will be completed in 1968. Several agencies have co-operated to provide various types of instrumentation. Total establishment to date is shown on Figure 3, (described as follows):

- A. Soils, Geology and Groundwater Branch, Water Resources Division
 - P3 18 test holes 80 to 260 feet deep with single and multiple piezometers installed (number in circle is number of piezometers per site).
 - GN 144 shallow non-instrumented groundwater wells
 - P5 15 differential piezometer nests at 10, 16, 33, 52, and 82 feet depth
- B. Meteorological Branch, Canada Department of Transport
 - RS 25 standard rain gauges
 - RA 4 Fischer-Porter automatic recording precipitation gauges
 - A9 1 Anemovane anemometer mounted on 30 foot (9 meter) tower with automatic recording anemograph in shelter
 - A.5 2 Cup Counter anemometers (0.5 meters tall)
 - 1 Thermohydrograph
 - ES 4 Class A evaporation pans



AT 4 sets Dept. of Transport standard maximum — minimum thermometers
2 Stevenson screens (instrument shelters)

C. Inland Water Branch, Canada Dept. of Energy, Mines and Resources and Design and Construction Branch, Water Resources Division

NR 1 Automatic recording metering station on the Taber Irrigation District Main Canal

AR 2 Concrete headwalls; automatic recording metering station on outlet coulees (drains)

NR 3 Automatic recording metering stations on outlet coulees

NN 1 Manual metering station

Meteorological instrumentation is now virtually complete. A study of irrigation efficiency was made. It is hoped that installation this year of additional stream gauging stations will make it possible to measure all surface water entering and leaving the basin.

An intensive study has been started of all parameters in a small subbasin in the Readymade area. Aerial photographs, mosaics and a detailed contour map have been prepared.

Water Development Program

A. Individual Water Development

This portion of the program is primarily devoted to the development of shallow groundwater, dugouts and dams. Drilling varies from 15 feet for surface supplies, to 75 feet for groundwater. No deeper farm drilling is contemplated; such applications are forwarded to the Research Council of Alberta.

Five hundred and ninety applications have been received to date (refer to Figures 1 and 2 for geographical distribution and completion ratio). A major portion of these came from two areas: the Claresholm District where preliminary drilling led to the development of the program, and the Peace River District where little drilling of any type had been undertaken. A satisfactory groundwater supply has been found in approximately one-third of the shallow sites tested. Areas of poor success are noted along with requests for deep information and are used to establish inventory priorities. The number of requests for dugout testing varies widely throughout the province, being greatest in southern Alberta where a long period of use has proven their worth. Dugouts are presently considered as a last resort by most farmers in the northern part of the province, even though most areas are suited for their construction. The logs of all holes drilled under the program are supplied to the Research Council for use in bedrock mapping and province-wide inventory of groundwater.

Requests for service have been handled by local District Agriculturists.

B. Regional Inventory

Regional Inventory is primarily concerned with groundwater on a regional basis. Priorities, based on the results of farm drilling, existing reports and field knowledge of the province, are established for each portion of this program as follows:

(1) Additional detail work on existing reports:

Drilling was started last winter in the Claresholm area to delineate and test buried channels as indicated by the Research Council of Alberta. Additional drilling and aquifer testing in this area will be completed by May 1968.

- (2) Supplemental Exploration for Research Council of Alberta reports:

Buried channel exploration in the Bassano, Manning-Hitchkiss, Bear Canyon-Worsley, Wardlow-Cessford and Alix areas are being used in reports of the Earth Science Branch.

- (3) Special Programs:

An economical and reliable method of repairing broken casing was developed for use in wells with a diameter of 6 inches or larger. Basically, the method consists of grouting P.V.C. plastic tubing inside the ruptured casing. This procedure has been used successfully in two southern Alberta wells.

Detailed channel drilling in an area north and east of Wardlow was started this fall. This is an area of need as determined by the Economics and Water Resources Division through farm interviews. The drilling is 80% completed with aquifer testing to be finished in 1968.

Samples obtained at each site with a Side Hole Sampler are retained for analysis. Electro-logging services and technical assistance is supplied to drillers and individuals whenever possible. Logs of all holes drilled will be metered on the Hydrodat System of groundwater information retrieval.

A good water supply is one of the most important requirements. The demand this program has received, necessitates continued service to farm areas.

Water Pollution Sampling

Sampling of surface water and groundwater at thirty-six sites in southern Alberta was continued during 1967. The objective of the program is to determine if pollution from biocides is occurring.

Infrared Aerial Photography and Imagery Interpretation

An area of 123 square miles southeast of Claresholm was chosen as a study area to investigate the value of infrared photography and imagery as a tool in the evaluation and exploration of groundwater. This area was chosen due to the groundwater knowledge already obtained by the branch through an extensive drilling program. In September, the area was flown and stereo-coverage was obtained both with panchromatic and deep infrared photography using a scale of 1" = 1000'. Complete coverage was also obtained with infrared imagery during the same 24 hour period. The results of these surveys are now being studied.

Service to Other Agencies

Photo-interpretation was used to locate and outline gravel deposits in the Ardley area. Geological services were provided in logging rock faces and cores for prospective damsites. This work was in connection with the Red Deer River Development Project. Interpretation was also carried out from photographs of the Fort Vermilion area to determine the amount of erosion and slumping which had taken place.

A groundwater discharge-recharge study was completed on Red Deer Lake. The results supplemented studies by P.F.R.A. related to use of the lake as a storage facility.

At the request of the Provincial Fire Commissioner, an investigation was initiated in the town of Elk Point to delineate contribution sources of raw gasoline seepage effecting private homes.

A preliminary investigation to determine feasibility of shallow groundwater supplied for expansion of the Raven Creek Fish Hatchery was conducted in March. Deep groundwater supplies are now being considered by a consultant group.

Meetings, Conferences and Travel

Professional staff served as specialist resource personnel on television programs, and for a number of short courses and schools. Staff also assisted in planning the Water Resources Division Conference in September.

L. D. M. Sadler, attended a discussion of A.R.D.A. supported groundwater programs in Winnipeg in April and an I.H.D. Conference on Groundwater Streamflow systems in Quebec in September.

L. J. McCracken presented a paper entitled "Tile Interception Drainage" at Saskatoon in June.

R. H. Schuler represented the branch on a tour through southern Saskatchewan irrigation projects. This tour was climaxed by attendance at the opening of the Gardiner Dam on the Southern Saskatchewan River.

G. L. Nielsen attended the International Devonium Symposium in Calgary in September.

STATISTICAL SUMMARY — 1967

A. PROFESSIONAL

	1966	1967
I	Soils Investigations for Irrigable Land Classification	
1.	Major Investigations (Involving technical field work)	
	8	2
	Parcels (160 acres)	
	1,139	350
2.	Minor Investigations (Involving technical field work on 160 acre parcels)	
	84	73
II	Drainage Investigations	
1.	Major Investigations (Involving technical field work)	
	72	57
	Parcels	
	511	141
2.	Minor Investigations — Parcels	
	309	350
	(Field Inspections only)	
III	Miscellaneous Investigations (Involving technical field work)	
1.	Farm Storage Reservoirs	
	64	87
2.	Land Development	
	22	10
3.	Groundwater Development	
	14	203
4.	Root Cellar Drainage	
	1	1

IV	Inspections		
	1. Field (Man Days)	291	440
	2. Farm Visits	222	188
	3. Office	300	200
	4. Aerial Inspections — Helicopter (Man Days)	16	14
V	Reports		
	1. Soils	25	73
	2. Drainage	135	42
	3. Groundwater	92	235
	4. Engineering (general)	25	20
	5. Laboratory Analysis (soil and water)	10	5
	6. Administrative	135	190
	7. Miscellaneous	46	49
	8. Inspection Reports	44	66
VI	Extension Work		
	1. Number of Programs Giving Talks or Demonstrations	12	25
	Attendance	580	925
	2. TV Appearances	16	17
	3. Number of Bulletins and Newsletters Issued	3,000	2,000
VII	Professional Participation By Giving Papers (Man Days)		
	1. Seminars	5	5
	2. Conferences	■	6
VIII	Meetings Attended (Man Days)	85	85
IX	In-Service Training (Man Days)	12	10
X	Court Hearings (Man Days)	6	1

B. TECHNICAL

(Work contributing to functions and reports of professional staff).

I	Field		
	1. Geological Borings — Failing Drill (CFD-1)	16	101
	2. Soil Borings — Failing (FA-100)		80
	3. Soil Borings — Sterling Drill	2,106	1,684
	4. Soil Borings — Mobile Drill	1,669	1,043
	5. Soil Borings — Giddings Drill	473	1,503
	6. Soil Borings — Manually	207	111
	7. Field Analysis for Hydraulic Conductivity (a) Soil Classification		
	Well	56	82
	Ring Test	72	108
	8. Groundwater Installations		
	(a) Existing to November 30, 1966	2,619	2,927
	(b) New to November 30, 1967	601	403
	(c) Readings	21,786	21,981
	9. Engineering Surveys (Man Days)	694	738
	10. Water Samples — Pollution		108
	11. Soil and Water Samples Taken in the Field	12,380	13,230
	12. Number of Groundwater Recorders (automatic)	6	8
	13. Drain Flow Measurement	1,104	1,212
II	Office		
	Basin-wide groundwater table report	3	4
III	Irrigated Applied Research Plots (Man Days)		47
IV	Miscellaneous Work — (Man Days)	186	224
	(Includes painting, water table well covers, cutting water table and piezometer pipe, and maintenance and repairs of field equipment).		

AGROHYDROLOGY BRANCH

Agrometeorology

The primary meteorological activities of the branch are the operation of the irrigation gauge and the monitoring of water balance and crop production in an irrigation study basin for the International Hydrologic Decade.

In addition to this, meteorological instruments have been installed in Bow Island on a research plot which operates under an A.R.D.A. agreement. Also established this year were snow courses in Lee Creek and Pincher Creek, to provide information to be used in connection with a watershed study on these two streams.

Irrigation Gauge

The irrigation gauge is a program to advise farmers when to time their irrigations based on the measurement of soil moisture reserve and the monitoring of climatological data to measure the depletion of this reserve.

Owing to the large amount of snowfall during the spring, a large number of grain farmers were able to successfully dry farm even though there was very little rainfall during the growing season. However, those farmers growing specialty crops became very dependent on irrigation during the latter part of the growing season. These farmers greatly benefited by the information provided by the gauge. High temperatures and lack of sufficient rainfall during the months of July, August, and September necessitated the forecasting of several irrigations in most districts. The large increase in new subscribers indicates a growing interest in the need for proper irrigation timing and an increased popularity of the irrigation gauge program.

Additional evaporation equipment was installed in 1967 providing a more accurate coverage of irrigation districts, thus increasing the benefits to users of the irrigation gauge.

The news media continue to support the gauge program and assist in extension efforts and also in publication of forecast information.

The irrigation gauge program was the subject of a paper presented by the Branch Head at the International Water for Peace Conference held in May of 1967 in Washington, D.C. This brought world attention to the irrigation program in Alberta.

A major change in the operation of the gauge program was inaugurated in 1967 by turning it over to the District Irrigationists. The District Irrigationists now work directly with gauge co-operators and users. They also prepare weekly reports for their districts, and calculate forecast data which they mail to subscribers and post locally.

To provide the information necessary to begin the 1967 gauge season, field samplings in the spring and laboratory analysis at numerous locations in the province were made to determine bulk densities, water holding capacities and soil moisture conditions for various soils series.

GAUGE STATISTICAL SUMMARY

Number of posting boards serviced	13
Number of gauge co-operators	48
Number of new subscribers	56
Evaporation equipment installed in 1967:	
Gen Atmometers	34
Bellani Plate Evaporimeters	14
Water Holding Capacity Tests:	
Number of locations	167
Number of holes	334
Number of samples	1570
Bulk Density Tests:	
Number of locations	167
Number of holes	334
Number of samples	1168
Soil Moisture Tests:	
Number of locations	206
Number of holes	412
Number of samples	1650
Extension:	
District meetings	6
TV appearances	4
Short Courses	2

International Hydrologic Decade

The Agrohydrology Branch co-operates with other agencies in a hydrologic study of an irrigation basin located between the Old Man River at Lethbridge and the Chin Reservoir. Installations attended by the branch are primarily of a meteorological nature. Wind, temperatures, precipitation, humidity, and evaporation were monitored. Monthly summaries were compiled and forwarded to the Department of Transport. An annual report was submitted to the national I.H.D. committee which tabulated the meteorological results and summarized the overall water balance for the area. This report also summarized crop use data and crop yields for the study basin.

I.H.D. STATISTICAL SUMMARY

Number of I.H.D. sites serviced	26
Number of rain gauges	25
Number of evaporation pans	3
Number of anemometers	4
Number of maximum-minimum thermometers	8
Number of hydrothermographs	1
Reports:	
Climatological	12
Precipitation	150
Evaporation	14
Wind Abstract	7
Annual	1
Extension:	
TV appearance	1

Irrigation Evaluations and Soil Physics

The Agrohydrology Branch conducts evaluations of irrigation systems and methods in the irrigation areas of Alberta. These evaluations are conducted in reference to soil characteristics, which requires the measurement of water holding capacities, bulk densities, infiltration rates and soil moisture conditions. The

major objective of these tests is to provide information for design personnel in regard to proper system dimensions, time of operations, and capacities.

Evaluation reports give the farmer information to direct him in the most economical and efficient use of his system and where necessary, corrective measures to make the system adequate.

These tests were made on surface and sprinkler irrigation systems. The information obtained from these evaluations is used to upgrade the Irrigation Guide for southern Alberta which is used by District Irrigationists and farmers in designing irrigation systems.

Agrohydrology professional staff were called on for consultation in connection with sprinkler design and irrigation water distribution. Sprinkler irrigation systems were designed for fifteen farmers. Also a preliminary engineering study was conducted relative to the feasibility of replacing existing irrigation canals of the S.M.R.D. in the Lethbridge-Coaldale area with a buried pipe lateral distribution system.

Bow Island Research Plot

The Agrohydrology Branch is engaged in a systematic analysis of irrigation design criteria and irrigated pasture management under a community grazing regime. This study is being carried out on a community pasture near Bow Island under an A.R.D.A. cost sharing agreement.

During the year 1967, a thirteen-acre plot was subjected to land levelling with a variation of slopes and design types including border dykes and furrows. Erosion tests were then conducted in the furrows and furrow evaluations made to determine the best levelling criteria for light soils. It was determined that serious erosion occurs in light soil when surface irrigation is applied before crop is established. The previously accepted erosion criteria for slope was found to be in error.

The purpose of this phase of the research is the evaluation of design criteria of border dykes, furrows and corrugations on light soils and a determination of the irrigation efficiencies of these three types under bare and cropped conditions.

Preparation of this pasture for irrigation and grazing research included the construction of 4000 feet of concrete lined ditch with a Parshall flume to provide accurate determination of the amount of water applied to the pasture.

EVALUATIONS STATISTICAL SUMMARY

Sprinkler Evaluations:	
Farms	39
Systems	39
Border Dyke Evaluations:	
Farms	2
Borders	7
Furrow Evaluations:	
Locations	1
Tests	12
Erosion Tests	6

Related Soil Physics Determinations	
Water Holding Capacity:	
Locations	130
Holes	157
Samples	790
Bulk Density:	
Locations	50
Holes	65
Samples	300
Infiltration Tests:	
Locations	32
Sites	120
Soil Moisture Determination:	
Locations	112
Holes	305
Samples	1055
Sprinkler Designs	15
Reports	161
Extension:	
Short Course	1
TV appearances	3

Farm Water Conservation

The Agrohydrology Branch is concerned with the conservation of ground water in dryland as well as irrigation areas. For this reason the branch is engaged in the monitoring of waterflow into and out of drainage basins and in the ground on dryland farms. The purpose of this is to evaluate design criteria for contour strips, contour ridges and terraces in relation to water conservation and crop yield.

The work in central and northern Alberta was continued this year with the collecting of agrometeorological data and relating this to the consumptive use of crops grown in the region. Together with soil testing of infiltration and water holding capacity, this provided the necessary information to measure moisture deficits for various crops. Rain gauges and evaporimeters were again installed in strategic locations.

These activities in the northern part of the province have been assumed by the Branch Head for Land Development in Edmonton while the Agrohydrology Branch Head is on educational leave.

As a part of the water conservation program, drainage studies were started in 1967 on the Lee Creek basin and in the Pincher Creek area. Spring runoff was estimated for Lee Creek by monitoring the flow in the creek and its tributaries. A survey crew mapped the cross section of the study basin and two snow courses were established to measure moisture entering the basin by snowfall. Physical properties of soils in the basin were determined by infiltration tests, bulk density analysis, and measurement of moisture holding capacity.

In Pincher Creek, a test site was chosen and gridded. Physical properties of soil determined and a snow course established. This site is on a farm in the area and will later be subjected to contour stripping to determine and evaluate design criteria as related to water conservation and crop yield.

STATISTICAL SUMMARY

Snow Courses	3
Cross Sections	1
Water Holding Capacity:	
Locations	7
Holes	24
Samples	120
Bulk Density:	
Locations	7
Holes	24
Samples	96
Infiltration Tests:	
Locations	13
Sites	72
Soil Moisture Determinations:	
Locations	23
Holes	88
Samples	352
Extension:	
TV appearances	2

LAND MANAGEMENT BRANCH

Advisory Committee

The Land Manager convened two meetings of the new committee as appointed by Ministerial Order, dated April 5, 1967.

The committee discussed new land sale regulations and recommended the adoption of a draft for new regulations that was submitted for legislative approval in December, 1967.

New Regulations

Briefly the new regulations provide for land purchase for unit consolidation, higher land use and land sales at market prices with fewer restrictions on purchasers. The purpose of the regulations is to provide a method for enhancement of local farm units with remaining unsettled lands.

Account Arrears

Depth discussion of arrear accounts resulted in a recommendation to attack the problem by presentation of several alternative solutions to force suitable arrangements.

Land Tenure

TABLE I
S.M.R.D., B.R.D. and Hays

	1963	1964	1965	1966	1967
Settlers Established	293	298	300	303	303
Quitclaimed, Withdrawals, Cancelled	38	46	56	58	61
Total Number of Purchase Agreements	362	379	385	388	393
Agreements Paid Up	85	109	127	149	169
Active Agreements	239	224	201	182	163
Additional Parcels Allotted	43	56	62	62	65
Parcels of Land Remaining Unsettled	90	80	86	99	102
	(*53-CP)	(*53-CP)	(*48-CP)	(*31-CP)	(*31-CP)
Number of Parcels of Land Leased	110	97	110	99	102
(*CP refers to lands reserved for community pasture development)					

TABLE II
Settlers in Arrears — S.M.R.D.

Year	Land		Water Right	
	Number	Amount	Number	Amount
1963	108	\$182,259.54		\$ 21,024.40
1964	93	215,846.65	77	22,200.24
1965	87	200,997.69	72	20,882.83
1966	74	160,959.51	59	14,928.23
1967	69	159,663.19	51	13,495.70

Settlers in Arrears — B.R.D.

Year	Land		Water Right	
	Number	Amount	Number	Amount
1963	55	\$ 61,238.24	26	\$ 4,763.56
1964	55	84,398.74	43	6,798.78
1965	52	91,772.21	50	10,291.13
1966	44	93,528.01	40	10,969.56
1967	40	93,528.91	37	10,030.28

Water Rights

Table 5 shows the status of water right agreements covering all of the irrigable lands in the St. Mary and Milk Rivers Development and the Bow River Development Projects.

TABLE 5
Water Right Agreements
S.M.R.D.

Year	Active Agreements	Agreements Paid Up	Number in Arrears	Amount of Arrears
1963	1,203	468	653	\$107,584.46
1964	1,154	552	741	105,392.90
1965	1,109	630	716	98,846.61
1966	1,053*	780	657	89,433.44*
1967	902@	940	517	60,186.26**

* Includes 101 Interim Water Right Agreements

@ Includes 120 Interim Water Right Agreements

** Includes 50 Interim Water Right Agreements in Arrears

B.R.D.

Year	Active Agreements	Agreements Paid Up	Number in Arrears	Amount of Arrears
1963	237	26	174	\$18,217.72
1964	293	28	190	21,698.23
1965	319	40	217	29,774.16
1966	305	45	172	23,242.48
1967	287	64	93	9,398.46

Revenue

Table 6 shows the collection from land sales and water right agreements of the settlers only.

TABLE 6
Collections on Land Sale and Water Right Agreements

S.M.R.D.				
	1964	1966	1965	1967
Land Sale	74,000.00	48,000.00	66,000.00	44,000.00
Water Right	113,000.00	119,000.00	112,000.00	96,000.00
B.R.D.				
	1964	1965	1966	1967
Land Sale	13,000.00	9,000.00	36,000.00	44,000.00
Water Right	16,000.00	21,000.00	30,000.00	31,000.00

ECONOMICS

The reorganization of the Water Resources Division during the year has officially placed a double entry onto the staff. Continuous work on the settlement program of the St. Mary and Milk Rivers Development and Bow River Development irrigation districts was carried out for the Land Manager of the Land Management Branch. As resources personnel to the Regional Director, Lethbridge Region, of the Water Resources Division, the staff was engaged in benefit-cost studies and advice on the economic feasibility of various resource development projects. The scope of involvement became broader and much more complex and the workload was extremely heavy. Present staff are definitely not enough to meet the demand.

The following major programs were undertaken during the year:

Farm Business Programs — 1965 and 1966 — St. Mary and Milk Rivers Development and Bow River Development Settlements

Approximately 90 settlers in the St. Mary and Milk Rivers Development and the Bow River Development have participated in this program. Information regarding their farm operations was summarized and analysed. The district averages together with the settler's own operation for comparison were returned to each individual for study.

The bumper crop of 1966 resulted in one of the most profitable years experienced by the irrigation settlers. The capital growth was apparent.

Highlights of the studies for the two years are as follows:

TABLE 3

**St. Mary and Milk Rivers Development Settlement
1965 and 1966**

	Medicine Hat Seven Persons		Bow Island Grassy Lake		Taber	
	1965	1966	1965	1966	1965	1966
Farms Reported	36	36	17	14	15	16
Total Land Area	412	433	561	641	306	286
Cropped	226	233	297	317	204	190
Cultivated	265	278	365	379	224	212
Irrigable	132	134	155	145	128	134
% of Land Area	32%	31%	28%	23%	42%	47%
Total Investment	\$38,578	\$42,720	\$48,182	\$45,920	\$47,084	\$54,495
Land and Buildings	22,643	23,176	25,497	24,100	24,791	27,070
Machinery and Equipment ...	7,638	8,461	10,165	10,886	12,643	14,634
Livestock	6,116	6,730	7,832	7,544	6,793	10,391
Grain and Feed	2,181	4,353	4,688	3,390	2,857	2,400
Total Operating Revenue ...	8,373	12,353	11,036	12,907	13,474	18,163
Total Operating Expenses ...	5,004	5,557	6,602	7,366	8,673	10,346
Net Farm Income	3,369	6,796	4,434	5,541	4,801	7,817
Labour Earnings	1,718	4,862	2,362	3,552	2,722	5,388
% Return to Capital	1.4	8.8	3.1	5.4	3.7	8.1
Net Capital Ratio	3.5:1	3.9:1	4.8:1	4.8:1	4.0:1	3.9:1
Capital Turnover (Years) ...	4.5	3.5	4.4	3.6	3.5	3.0
Value of Crop Produced	7,079	8,858	10,049	7,764	10,024	13,012
Per Cultivated Acre	26.72	31.86	27.53	20.49	44.75	61.38
Total Equipment Investment	7,638	8,461	10,165	10,886	12,643	14,634
Per Cultivated Acre	28.82	30.44	27.85	28.72	56.44	69.03
Total Annual						
Equipment Cost	2,942	3,044	3,215	3,538	4,356	5,329
Overhead Cost	1,424	1,556	1,772	2,049	2,271	2,760
Operating Cost	1,518	1,488	1,443	1,489	2,085	2,569
Per Cultivated Acre	11.10	10.95	8.80	9.34	19.45	25.14
Overhead Cost	5.37	5.60	4.85	5.41	10.14	13.02
Operating Cost	5.73	5.35	3.95	3.93	9.31	12.12
Percentage						
Overhead Cost	48%	51%	55%	58%	52%	52%
Operating Cost	52%	49%	45%	42%	46%	48%

TABLE 4

**Bow River Development Settlement
1965 and 1966**

	Enchant, Lomond and Travers	
	1965	1966
Farms Reported	23	23
Total Land Area	697	749
Cropped	319	344
Cultivated	477	549
Irrigable	143	147
% of Land Area	21%	20%
Total Investment	\$45,257	\$54,171
Land and Buildings	23,095	28,058
Machinery and Equipment	11,219	11,252
Livestock	4,821	4,065
Grain and Feed	6,122	10,796
Total Operating Revenue	11,455	18,498
Total Operating Expenses	5,530	6,980
Net Farm Income	5,925	11,518
Labour Earnings	3,919	8,970
% Return to Capital	6.5	15.1
Net Capital Ratio	3.2:1	4.4:1
Capital Turnover (Years)	4	2.9
Value of Crop Produced	10,946	18,020
Per Cultivated Acre	22.95	32.82
Total Equipment Investment	11,219	11,252
Per Cultivated Acre	23.52	20.50
Total Annual Equipment Cost	3,314	4,283
Overhead Cost	1,840	2,065
Operating Cost	1,474	2,218
Per Cultivated Acre	6.95	7.80
Overhead Cost	3.86	3.76
Operating Cost	3.09	4.04
Percentage		
Overhead Cost	56%	48%
Operating Cost	44%	52%

Farm Business Analysis — Irrigated Soils — 1966

This is a joint extension program on farm business analysis with the Agricultural Economics Division, and has been carried out since 1962. Thirty irrigation farmers participated during the year. A detailed report has been published by the Agricultural Economics Division.

Because of the vast area of our settlement and the fact that the participating farmers are scattered in four District Agriculturists' areas, it was decided that this project be transferred to the respective District Agriculturists' offices for their guidance next year.

Resources Economics

In co-operation with the Design and Construction Branch, the agricultural benefits for Stirling Lake Drainage and Warner South Drainage Projects were completed. The studies have provided the guidelines to justify the expenses for the projects involved.

Another benefit-cost analysis was carried out on "Rebuilding Irrigation Distribution Systems for the Lethbridge-Coaldale Projects". This involved a comparison of six methods of rebuilding or replacing the present outdated irrigation system. Due to its complexity, this program is scheduled for completion early next year.

Extension and Public Relations

Considerable time was expended in participating in and attending television programs, agricultural short courses, meetings and Lethbridge Junior College lectures.

Members of the Advisory Committee on Irrigation from the South Saskatchewan River Development were taken on a tour of our land settlement in the St. Mary and Milk Rivers Development irrigation project in October. During the tour, the committee members expressed the fact that our settlers have made very good progress, considering the short period of the settlement.

Farm business summaries and economic charts and graphs on St. Mary and Milk Rivers Development and Bow River Development settlement programs have been printed and sent to various provincial and federal agencies for their information.

Economic Factors for Irrigated Land Classification

A proposal that the economic factors, such as land use intensity, productivity, marketing facilities, etc., be included in the present land classification standards for the irrigation districts has been completed and submitted to the Land Classification Committee for their consideration.

Miscellaneous

The collection of published statistics was continued. This proved to be very useful.

Consultation and assistance were also given to the Agricultural Economics Division staff members on economic studies in this region when required.

REPORT OF THE WHEAT BOARD MONIES TRUST

REPORT OF THE BOARD OF TRUSTEES OF THE SURPLUS WHEAT BOARD MONEY RECEIVED BY THE GOVERNMENT OF THE PROVINCE OF ALBERTA FROM 1916-19 CANADIAN WHEAT BOARD

Members

Honourable Harry E. Strom	— Minister of Agriculture	— Chairman
Dr. E. E. Ballantyne	— Deputy Minister of Agriculture	— Member
Hugh M. Thompson	— Olds, Alberta	— Member
Minot L. Stetson	— Edmonton, Alberta	— Member
H. W. Gaebel	— Secretary	

A statement showing the Receipts and Expenditures is attached hereto together with a statement of Assets and Liabilities.

During the year ending December 31st, 1967, receipts were \$53,484.34 which includes the redemption of Province of New Brunswick and Ontario Hydro Electric debentures and interest on investments.

Reinvestments were made on the purchase of \$45,000.00 Alberta Government Telephones 6% debentures and \$8000.00 Universities Commission 7% debentures.

Payments during the year amounted to \$56,434.79 being the payment of scholarships and bursaries and investment purchases.

Meeting

A meeting of the Board of Trustees was held on August 30th, 1967 and Scholarships and Bursaries to be awarded was approved for the ensuing year totalling \$5,100.00. The Board has continued the policy of conserving the principal in the Trust Fund, making all payments from income received on interest on investments.

TREASURY DEPARTMENT WHEAT BOARD MONIES TRUST FUND BALANCE SHEET AS AT DECEMBER 31, 1967

Current

ASSETS

Bank Balance	\$ 4,895.07	
Accrued Interest Receivable	925.05	\$ 5,820.12

Investments

		Par Value	Book Value	
Gov't of Canada	3¾% Jan. 15/78	\$ 2,500.00	\$ 2,508.80	
Prov. of Sask.	5½% Feb. 15/82	5,000.00	4,973.91	
Alta. Gov't Tel.	6% Apr. 15/92	45,000.00	45,000.00	
Prov. of Newfl'd.	3¾% June 1/76	4,000.00	3,966.16	
City of Calgary	3½% July 1/68	4,000.00	3,999.36	
Universities Comm.	7% Dec. 1/92	8,000.00	7,920.00	
Prov. of B.C.	3% Dec. 15/69	45,000.00	44,953.90	
		<u>\$113,500.00</u>	<u>\$113,322.13</u>	

Total Investments - Book Value		\$113,322.13
Total Assets		\$119,142.25

LIABILITIES

Trust Fund December 31, 1966		\$117,944.11
Add: Surplus for 1967		1,198.14
		<u>\$119,142.25</u>

**TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
ACCRUED INTEREST RECEIVABLE AS AT DECEMBER 31,
1967**

Government of Canada Debentures			
\$2,500.00, 3¾%, January 15, 1978, 5½ months			\$ 42.96
Province of Saskatchewan Debentures			
\$5,000.00, 5½%, February 15, 1982, 4½ months			103.13
Alberta Government Telephones Debentures			
\$45,000.00, 6%, April 15, 1992, 2½ months			562.50
Province of Newfoundland Debentures			
\$4,000.00, 3¾%, June 1, 1976, 1 month			12.50
City of Calgary Debentures			
\$4,000.00, 3½%, July 1, 1968, 6 months			70.00
Universities Commission Debentures			
\$8,000.00, 7%, December 1, 1992, 1 month			46.67
Province of British Columbia Debentures			
\$45,000.00, 3%, December 15, 1969, ½ month			56.25
Bank Interest			
November, 1967	\$12,965.00.....@ 2%.....	\$21.31	
December, 1967	4,220.00.....@ 2%.....	7.17	28.48
Add: Accumulation of Discount			
Accrued on Prov. of Saskatchewan		\$.78	
Accrued on Prov. of Newfoundland .....		.81	
Accrued on City of Calgary .....		.26	
Accrued on Universities Commission .....		.30	
Accrued on Prov. of British Columbia .....		.96	
Less: Amortization of Premium			
Accrued on Government of Canada .....		.55	2.56
Net Earnings Accrued to December 31, 1967			<u>\$925.05</u>

**TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED DECEMBER 31, 1967**

Bank Balance January 1, 1967			\$ 7,845.52
Interest on \$2,500 Canada	\$ 93.74		
Interest on \$5,000 Province of Sask.	275.00		
Interest on \$45,000 Prov. of New Brunswick	787.50		
Redemption \$45,000 Prov. of New Brunswick	45,000.00		
Interest on \$45,000 Alta. Gov't Telephone	1,350.00		
Interest on \$4,000 Prov. of Newfoundland	150.00		
Interest on \$4,000 City of Calgary	140.00		
Interest on \$4,000 Ontario Hydro Electric	170.00		
Redemption of \$4,000 Ontario Hydro Electric	4,000.00		
Redemption of \$45,000 Prov. of British Columbia	1,350.00		
Bank Balances	168.10		
			<u>\$53,484.34</u>
			<u>\$61,329.86</u>
Deduct Payments and Investment Purchases —			
Scholarships — Fairview School	\$ 700.00		
— Olds School	1,200.00		
— Vermilion	500.00		
University of Alberta	1,100.00		
Purchase of 45,000 Alta. Gov't Telephone	45,014.79		
Purchase of 8,000 Universities Commission	7,920.00		
			<u>56,434.79</u>
Bank Balance December 31, 1967			<u>\$ 4,895.07</u>

