EXTENSION SERVICE Review

SEPTEMBER 1961

Extension Methods for a Specialized Agriculture

EXTENSION SERVICE Review

Official monthly publication of Cooperative Extension Service: U. S. Department of Agriculture and State Land-Grant Colleges and Universities cooperating.

The Extension Service Review is for Extension educators—in County, State and Federal Extension agencies—who work directly or indirectly to help people learn how to use the newest findings in agriculture and home economics research to bring about a more abundant life for themselves and their community.

The Review offers the Extension worker, in his role of educational leader, professional guideposts, new routes, and tools for speedier, more successful endeavor. Through this exchange of methods, tried and found successful by Extension agents, the Review serves as a source of ideas and useful information on how to reach people and thus help them utilize more fully their own resources, to farm more efficiently, and to make the home and community a better place to live.

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In This Issue

EAR TO THE GROUND

Change. This is a word tied closely to agriculture these days. And well it should be. Agriculture today is a rapidly changing industry.

If you asked several people, What is change, you would receive many different answers. For example, one reply might be: It's the stuff that jingles in our pockets (or purses).

And you would probably react, That's not the kind of change I mean. But if we stretch our imagination a little, we can compare agriculture to this kind of change—a coin.

One side of this coin could represent commercial agriculture—the 56 percent of our farmers who produce more than 90 percent of total farm output. That's the bright, shiny side of the coin—the side that reflects to the whole world the amazing efficiency of American agriculture. This is the part of American agriculture that has made us the best fed, best clothed, best housed nation in the world, with the highest standard of living ever known.

Commercial farmers making these rapid advances in production are becoming highly specialized. And as they do, we in Extension have to devise new approaches to carry out our educational job.

As Director Ahlgren of Wisconsin points out in the opening article of this issue, "Methods and procedures appropriate and adequate yesterday are likely to be inappropriate today and obsolete tomorrow . . . It is crystal clear that today's Extension Service must be ever alert to changing times and conditions and expanding educational needs of people . . . We must take advantage of every opportunity to develop the skills and know-how to serve effectively."

This issue deals with extension methods for a specialized agriculture. It gives examples of new ideas being tried to help farmers adjust to the rapid changes taking place. Area specialists—intensive information campaigns—information centers—technical short courses—and teamwork with outside groups are among the many ideas included.

Next month we're going to take a look at methods for working with farmers representing the other side of the coin—the 44 percent producing only 9 percent of farm output. The October issue will be concerned with Extension's role in the Rural Areas Development Program. It will give examples of how we can help people make optimum use of their area's human, physical and other resources.—EHR

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AGRICULTURE . . .
an Industry in Transition

by HENRY L. AHLGREN, *Associate Director of Extension, Wisconsin*

TODAY, as with all other segments of America's economy, agriculture is in an unprecedented state of flux.

In fact it is in a state of technological and economic revolution. Agriculture is changing from a business of arts and crafts to a business which is undergirded and deeply rooted in science and technology.

We are seeing the greatest agricultural changes of all time—unparalleled and unprecedented changes which are occurring at an ever increasing rate—changes in the tools employed on our farms, in the methods used, in the people who manage and operate our farms, and in their relationships with the rest of society.

In today's agricultural world, methods and procedures appropriate and adequate yesterday are likely to be inappropriate and ineffective today and obsolete tomorrow. Adjustment and change are now the two most important words in our agricultural dictionary.

Agricultural Trends

Based on current information and trends, it appears likely that the situation on our farms will develop about as follows during the next 15 to 25 years:

- American agriculture will continue to be an expanding industry in every important respect except one—the number of people required to operate our farms.
- Our agricultural plant will require more capital, more science and technology, more managerial ability, and more purchased production inputs.
- Commercial family farms will be larger.
- The number of businesses supplying materials and services to farmers and handling, processing, and distributing farm products will increase.
- Vertical and horizontal integration, especially of perishable commodities, will increase.
- Many agricultural products will be produced according to specification and sold under contract.
- Farmers will have increased competition from industry-made substitutes for farm products and from foreign countries.
- The "frontier of the mind" as it relates to agriculture will increasingly replace the "frontier of geography." New knowledge, and its application, will be the most important "commodity" in tomorrow's agricultural world.
- The productivity of American agriculture will continue to increase, and our most important problem, as it is today, will be learning to live with abundance.

It is crystal clear that today's Extension Service must be ever alert to changing times and conditions and expanding educational needs of people. The educational level is rising, values are changing, and the level of living is increasing.

Agricultural problems are no longer confined to the farm. There are unparalleled needs and opportunities for expanded educational services growing out of social and economic changes—the decline in the number of farms and of farm people; the growing complexity of modern farming; the increasing number of nonfarm residents requesting services; the growing inter-relatedness of agriculture, business, and government; and the demand for services in marketing and consumer information.

Clearly, changes of the scope and magnitude now occurring will continue to occur at an even greater rate. The adjustments which necessarily follow require that we carefully reappraise our resources and programs and make necessary adjustments to best meet the needs of the people we serve.

Rearming Ourselves

To meet our responsibilities and take full advantage of our opportunities for broader service, we must take advantage of every opportunity to develop the skills and know-how to serve effectively.

We have a responsibility to ourselves—and to the people we serve—to take advantage of every opportunity provided for our professional improvement. We must be competent and proficient in subject matter areas, understanding Extension as a public educational institution, human relations, planning, determining objectives and goals, organizing, relating theory and principle to practice, counseling, working with local leaders, teaching, evaluation, and communication.

Along with adequate training—and equally important—will be the need for organizing and marshaling our educational resources to fit the needs of the people we serve. The "shot gun" method will no longer cover the job. Of course some generalization is necessary, but in many areas we need to take a more specialized approach.

The environment in which we are operating is changing rapidly. Our audiences are growing in number and have different problems than before. Research is advancing more rapidly.

(See Transition, page 188)

looking objectively at

Geographic Assignments

by J. C. EVANS, *Assistant Director of University Extension, Missouri*

WHAT do you do with a new idea, or an old idea fitted out in a new dress? Suppose using it would result in a major change in something in which you have a substantial psychological investment?

Most of us usually treat such an idea in one of four ways:

1) We succumb rather quickly and easily to the alluring qualities of things which are new. 2) We reject it immediately (usually prematurely) as being too drastic for serious consideration. 3) We approach it as though we were approaching a rattlesnake—oh, so cautiously. 4) Or, we accept the idea immediately as being worthy of thorough study, examine every facet of it, weigh the implications, accept either fully or partially, and only then try it or reject it.

These four methods of treating a new idea describe the range of treatment currently being given the idea of assigning extension field personnel to geographic areas larger than a county. The same is true for proposed changes in administrative structure, clientele composition, organizational policies, and operational procedures —all highly essential facets of the administrative and operational environment in which each of us works.

Missouri is trying to create and maintain a high degree of flexibility and malleability in each of these environmental factors to improve the quality and content of its educational program. Thus the idea of geographic assignments is being given the fourth treatment through experiments with several types of assignments.

Broad Participation

Currently, extension personnel in 21 counties participate in some form of area geographic assignment, with each individual working in two to seven counties. This includes personnel working in the several major program areas: Balanced Farming (management), family living, youth, marketing, community development, and agricultural production efficiency.

With an increase in area assignments in these program areas, plus a much increased emphasis on Rural Areas Development, Missouri plans within the next year or two to have extension personnel in at least 25 to 35 additional counties involved in such assignments.

For example, five sets of counties (from two to five in each set) have been united in the area of Community Development. Parts of three counties are being given special attention by an extension agent who is highly qualified in Balanced Farming (Farm and Home Development). At least nine more sets of two or more counties are being considered in the Rural Areas Development Program.

Each of these involves an area assignment for one extension agent in each area.

The most extensive trial of this area assignment activity was initiated on a full scale early this year. Seven counties in southeast Missouri were combined into one unit for many purposes.

Detailed Assignments

Twenty of the 29 extension agents in these seven counties have been given assignments involving more than one county. Only the seven county agents (administrators) and two others are assigned to a single county.

Three of the area personnel have been assigned to work in all seven counties; one each in horticulture, soils, and entomology. Each has an M. S. degree in his field. We are considering adding two more such persons in other specialized subject matter areas.

No new positions have been added. But as general county extension positions are vacated, they are filled with a more specialized agent and assignment to several counties is made.

Home economists have specialized in the areas of family planning, nutrition, home management, and clothing. Each is responsible for the overall family living program in her county plus work in two or three counties in her special field.

Youth and Balanced Farming agents are also working in more than one county.

Experience to date lends strong encouragement to continue trying to perfect this type of assignment and expand it to other areas of work and in other areas of the State.

Financial Arrangements

Finances, in situations where counties are contributing, have not yet been a problem. In Missouri, counties begin contributing to salaries with the addition of a third extension agent in the county. The amount grows progressively larger, in uniform increments, as the number of agents per county increases.

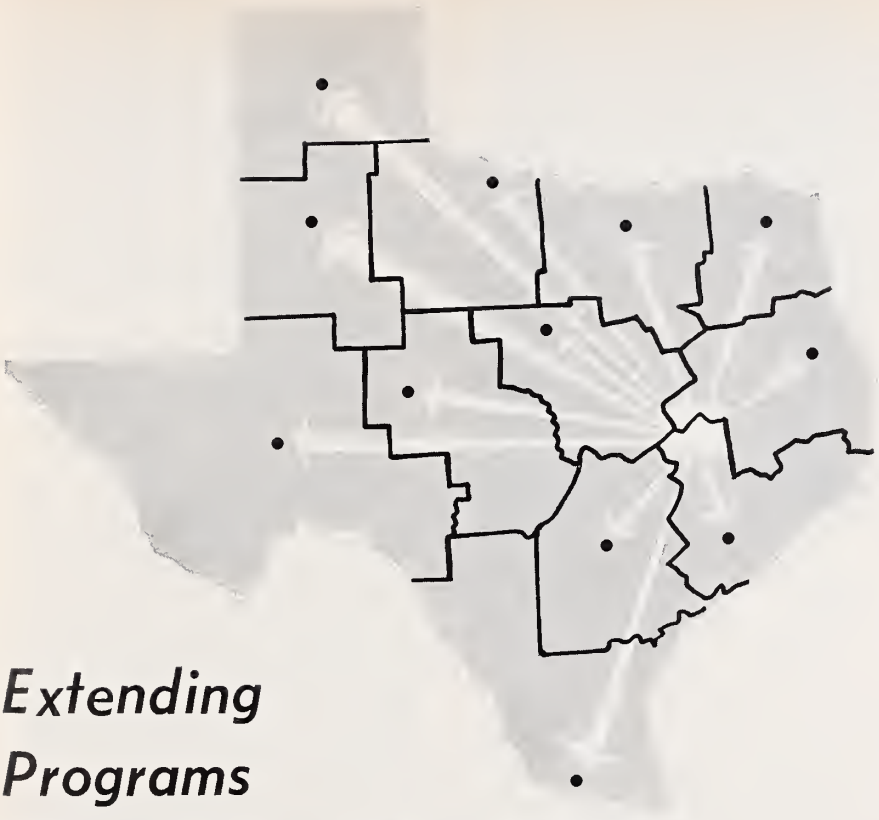
In all multiple county cases where counties are contributing, they divide the total cost equally. Expenses of agents working in all seven counties are covered equally with each county sending monthly its share of both expenses and salary. When only two counties are involved, each shares equally in the salary but pays all the expenses occurring in that county.

Slightly different arrangements have been worked out in other sections of the State.

Getting a clear, mutual understanding and a general consensus about the total effort was given top priority months before the plan was finally adopted.

This meant a series of carefully planned meetings; a session between the supervisor and the county administrators; a series of discussions with the executive boards of the extension councils (legal body with whom Extension works on programs, etc.) in which the director, supervisor, specialists working in the area, and others participated; a report by executive board members back to councils; contacts by supervisors and agents with other key leaders; meet-

(See Area Assignments, page 186)



Extending Programs through Area Specialists

by A. H. WALKER, *State Agricultural Leader, Texas*

How can we gear extension programs to the present mechanized, commercialized, and often specialized farmer or rancher?

We know that the investment of today's farmer is 2½ times as great as in 1940. We recognize, too, that he must be an early adopter to realize the most benefits of research, putting into practice those findings as soon as they are out of the laboratory.

County extension agents, backed by subject-matter specialists, have been doing a masterful job of keeping extension's clientele informed of new developments. Now they are encouraging understanding and adoption of agricultural practices and bringing them closer to farm and ranch families through the services of area specialists.

Specialization Needed

Today the overworked county agricultural or home demonstration agent, at best, can be thoroughly informed in only one or two areas of work. General recommendations are not enough for present day agricultural problems—in poultry, crops, livestock, wildlife, entomology, or plant pathology.

Most agents simply cannot keep informed on 8 or 10 different areas even though all may be important in the county. Although specialists provide concise interpretations by service letters, slide sets, TV and radio releases, periodic training meetings, and personal visits, agents still have a problem being "experts."

In Texas we also have the problem of great distances between State headquarters and district and county offices. Distance, time, and space are deterrents for an effective educational program.

Specifically, it is 609 miles from College Station to Dallan County in the northwest, 691 miles to El Paso in the western extreme, 361 miles to the Rio Grande Valley in the south, and 267 miles to Texarkana in the northeast.

Subject-matter specialists located at headquarters cannot possibly give agents in the 254 counties the training they need in so many subject-matter areas.

Assigning Area Experts

For these reasons, Texas has begun to employ area specialists. They can extend programs developed by the headquarters specialists and apply them to situations and specific problems of a given geographical area or district.

Presently, we are emphasizing management assistance. As one farmer said, "It isn't the individual problems that bother me so much as the combination of enterprises."

Area farm management specialists give educational assistance in determining the most profitable combination of enterprises, adjustments to farm programs, cost analysis, income tax, social security, and finance and credit. One of these specialists is located at the district headquarters in each of 12 extension districts.

Area home management specialists are located on a bi-district basis and are supported by three headquarters specialists. The area farm management specialists are served by five headquarters specitlists, each with different responsibilities in farm management. One also serves as an overall coordinator.

This area effort has more than met our expectations.

Twelve other area specialists are located mainly at Lubbock or Weslaco which are prime centers for both research and extension work.

At the Lubbock headquarters, in addition to the home and farm management specialists, there are an area agronomist, irrigation specialist, soil chemist, entomologist, and livestock specialist. These latter five specialists serve an area of 82 counties in the northwestern portion of the State.

At Weslaco, in addition to the area farm management specialist, there are a horticulturist, entomologist, plant pathologist, and agronomist. They serve 32 counties in South Texas.

The remaining area specialists have offices at other strategic locations ac-

(See Area Specialists, page 188)

Specialization Calls for Constant Change

by HOWARD DAIL, *Information Specialist, California*

How do you reach farm audiences that grow more specialized each year?

In California, the average farm advisor long has been essentially a specialist in one or two certain fields. Yet methods change so that advisors must concentrate their efforts even more.

County lines, once considered fences over which county staff members should not wander, are beginning to disappear as far as limiting the area served by an advisor. Now, an increasing number of staff members have responsibilities for fields of work in two or more counties.

Recently, one of the State's assistant directors said, "Extension has an obligation to the people it serves to utilize its staff efficiently and at the same time give help to all who need it. Every farmer is entitled to the best that the university can offer. This means that Extension needs to take a look at situations where assignments across county lines will result in greater efficiency and service to extension clientele."

Trading Specialties

Most intercounty arrangements are on a barter basis. For instance, in Merced County the farm advisor in poultry work had much training and experience in turkey production. He is responsible for turkey enterprises in both Merced and Stanislaus Counties. In exchange, the poultry farm advisor in Stanislaus County devotes his time to broiler and laying hen operations in both counties.

This means that meetings on either turkeys or chickens will include growers from the two counties. Newsletters for turkey and chicken producers go to both counties.

Similar arangements exist between other counties, including home advisors. In the Sacramento Valley, six county home advisors have chosen specialized subjects such as nutrition or home management. They put together demonstrational material and hold training meetings in any of the six counties.

In this way, the individual home advisor can give major emphasis to one or two subject matter fields in the entire area. At the same time, she acts as resident home advisor in her home county.

Commodity Letters

To help carry specialized information to growers, nearly every advisor has a commodity newsletter. These letters go only to a regular mailing list. They bear titles such as Nursery and Floral Facts, Sheep Notes, Orchard Notes, Home Ec Briefs, and 4-H Green Leaves.

County circulars are another effort to fit the information available to a particular group of farmers. A publication on growing long white potatoes in Kern County contains sample costs for the production of potatoes in that county along with a brief presentation of production practices. The same costs and recommendations would apply in few, if any, other counties.

Many county staffs are developing training programs for fieldmen of commercial concerns, such as fertilizer dealers, insecticide companies, and feed dealers.

Single meetings also have undergone changes. Fewer but more significant meetings for specialized audiences seems to be the pattern.

One county staff holds a radio forum instead of countywide meetings. This roundtable broadcast lasts for an hour and includes six or more participants—farm advisors, field experiment station personnel, growers, and others concerned. Advance publicity by both the station and the extension office helps draw a big audience.

Institutes, or schools, and local short courses are another important way of presenting particular information to specialized audiences. Dairy schools, bankers' short courses, and crops and irrigation institutes are among those offered by agricultural farm advisors. Home advisors have held courses on nutrition, family financial planning, home furnishings, and family living.

These meetings are conducted once or twice a week for 5 to 8 weeks. They usually involve one or more advisors, specialists, and members of the resident teaching and research staff. Many 4-H leaders have taken part in specialized training on a regional or county basis.

Commodity days such as Peach Day, Prune Day, Grape Day, and Livestock Day have been increasingly well attended in recent years. These Days, held on one of the university campuses, include program participation by extension specialists, advisors, and growers. Regional and county days of these types are increasing.

Team Research

Specialization has brought about even closer teamwork between the county farm advisor, specialist, and experiment station staff. A new insect pest or plant disease may appear suddenly. If the advisor does not know the answers, he asks the specialist to help.

The problem may go to the experiment station staff. There it receives thorough attention by the best brains available at the university. The control determined goes through the specialist to the farm advisor, who works with the commercial farmer to test the proposed solution to the problem.

To test experiment station findings under local growing conditions, several thousand research and demonstration tests are set up by farm advisors.

California extension staff members expect continuous changes to occur in agriculture. And they are adjusting their methods to meet the needs of this highly specialized and rapidly changing agriculture.

Getting Technical with Producers

by CHARLES E. SUMMERS,
Animal Husbandman, Iowa

IOWA county extension directors are successfully teaching local livestock producers and feedmen the "whys" of livestock nutrition with educational material suitable for college post-graduate level.

Pilot courses, directed by State livestock specialists in 1959-60 in nine counties, reached more than 380 men. Examinations at the close of each 3-day course showed a 44 percent average increase in the farmer-students' grasp of modern nutrition.

Last fall Clinton County used the same materials in a 5-day course attended by 45 farmers from 14 townships. They demonstrated that the course could be equally successful under local leadership with farmers as students.

Ten other county staffs conducted similar classes as part of their regular programs last winter.

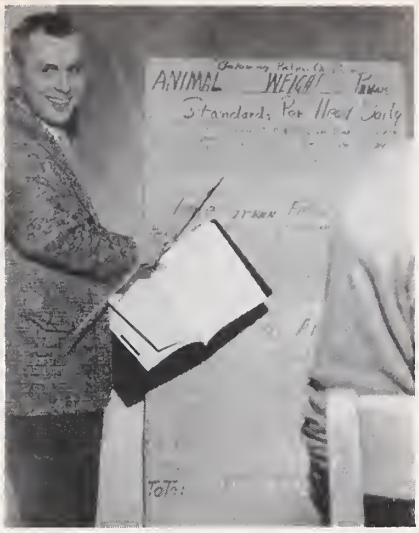
Behind these local short courses lay the problem of the gap between agricultural research and practice.

Livestock specialists at Iowa State University realized there were so many new feeds, feed additives, etc., on the market that general feeding recommendations would not bridge the gap. They planned, by working through county agents, to teach producers basic principles of nutrition so they could make their own decisions on practical problems.

Review for Agents

So, nutrition short courses started at the university, with agents as students.

In October 1959, the entire Iowa county staff (100 county offices) was invited to a 4-day livestock nutrition short course at Iowa State.



Willard Branch, vocational agricultural instructor, leads a discussion on the nutrient requirements of beef cattle with a class of farmers attending the Clinton County Livestock Nutrition Short Course.

Nine hours each day were spent in reviewing general biochemistry, biochemistry of digestion, reproduction and growth in farm animals, energy metabolism, protein metabolism, vitamin and mineral metabolism, experimental techniques, and feed additives.

These reviews were followed by guided discussion groups in which livestock rations were balanced and practical application of the basic principles was discussed.

County staff members were expected to use this information in developing their county programs. Each county was provided a handbook of reference material.

State-County Course

In the winter members of the central staff initiated a similar program in nine counties, cooperating with local agents.

Each county program consisted of a 3-day short course (1 day a week for 3 weeks) for producers and feed dealers. The audience was composed of informal leaders invited by the county extension director.

These men registered for the course in advance. Each received a handbook of reference material on basic nutrition and practical feeding recommendations.

Motion pictures, slides, and other visual equipment were used to help in presenting the material.

These programs involved 27 meetings. Average attendance was 42—equivalent to 1,134 individual contacts.

An evaluation test was given on the first day and final day of each short course. The average final score was compared with the average of the first-day scores. Audiences in the nine counties increased their overall average test score by 44 percent.

Local Level School

Last fall the Clinton County extension staff and the DeWitt Community High School vocational agricultural department conducted their own livestock nutrition short course.

They used material from the course on campus a year earlier.

Forty-five farmers, representing 14 townships, attended the series of 5 weekly meetings. Instructors included extension animal husbandmen, a vocational agricultural instructor, and county extension staff members.

The topics discussed at the five meetings were similar to those at the central staff-directed short courses. The student-farmers actually balanced rations during workshop sessions and on the farms. Experimental data were reviewed and explained. And time was allowed for questions.

Farmers filled out questionnaires and prepared work sheets as their "homework" between meetings. The instructors summarized the results on the questionnaires and worksheets at following meetings.

Motion pictures on swine and beef nutrition helped the instructor to summarize the discussion.

A manual was given to each registered member of the class as a reference book at home. The manual reported latest information on 30 phases of livestock nutrition.

Much of the material presented in these short courses is on a college graduate level. Yet farmers have been quick to grasp and accept the ideas presented.

Through this type of endeavor, Iowa extension teachers hope that farmers will understand the principles of livestock nutrition better so that they may make wiser decisions on feeding and management.

Concentrating on Mass Media

by SAM BURGESS, *Editor, Agricultural Experiment Stations,* and GEORGE HINTON, *Extension Field Editor, Georgia*

EFFICIENCY became the watchword when the cost-price squeeze of the late 1950's was forcing too many Georgia families off the farm.

In a State where field crops and livestock are about equal as sources of farm income, efficiency meant, primarily, greater returns per acre from investments for crops and pastures. To help farmers get such returns, Extension launched the Intensified Soil Fertility Program.

Program Background

Conceived by extension agronomists, the program was designed to equip county agents with tools to raise the fertility of their counties' soils to more efficient production levels.

Fertilization was nothing new. But surveys indicated that many farmers knew little about fertilzer.

To close this gap in farm know-how, agents were to conduct intensive educational programs on soil fertility, using every means of mass communications available. Success would depend on enlisting the full cooperation of everyone who had an effective voice in county affairs—from newspaper editors and radio or TV station managers to farm women who had telephones.

Supporting the county agents with the facts of fertilization, including latest results of research at experiment stations and on-the-farm demonstrations, were extension agronomy specialists and their commercial colleagues in the Georgia Plant Food Educational Society. Extension editors were to furnish communications materials and techniques.

Soil fertility programs began in six pilot counties in 1957. Since then they have been conducted successfully in 80 counties and are underway in 29 more this year. Followup programs emphasize corn production, pasture improvement, and cotton production on an annual basis.

After orientation and training in district workshops, county agents launched their individual county programs with a kickoff dinner for county leaders. The guest list included leading farmers and professional workers of all agricultural agencies in the county.

At these kickoffs extension agronomists emphasized the economic importance of fertile soil to the county's overall income with slide talks. These slides included color charts of current fertility conditions, average yields, and estimated production potentials.

Enlisting Support

County agents later used these slides and other visuals, such as flannelboard kits, to present the program to meetings of civic, farm, and community organizations. Members were encouraged to help spread the word: Don't Guess—Soil Test, and Have You Had Your Soil Tested? Many home demonstration clubs organized telephone brigades to do this.

Soil test stations, where soil sample tubes, bags, and instruction leaflets are available, were set up at strategic locations. 4-H teams were trained to make soil samples for busy farmers. Soil test leaflets also were distributed through counter display racks in stores and banks. Banks inserted these leaflets in monthly statements. And grocery stores put soil test leaflets in grocery bags.

The cooperation of newspaper editors and radio and TV station managers was sought in the beginning. Generally the response has been enthusiastic. Many editors have issued special soil fertility editions or sections on each of the four basic steps of the program. Packets containing localized news stories, editorials, pictures, mats, and advertising copy were supplied by extension editors.

Radio and TV stations have received similar services including taped interviews, skits, spot announcements, slides, and ideas for local programs. A number of stations have held "soil fertility days" during soil fertility weeks. One radio station issued a brochure detailing its participation in the program.

Posters, exhibits, street banners, bumper stickers, broadsides, circular letters, post cards, and special events (many of which were planned and executed locally) have augmented major mass media efforts.

Multiple Results

As a result, the entire population of counties, urban and rural alike, have become soil fertility conscious. Soil samples from many counties have increased from a trickle to a flood. Both the number of farmers and total farm income have increased.

Coffee County, one of the pilot counties, raised its gross income from farm enterprises from $14 million in 1957 to $20 million in 1960. In this same period Colquitt County's total farm income rose from $15½ million to almost $21 million. Worth County showed a $1 million increase from corn, cotton, tobacco, and peanuts in 1 year.

Important keys to success of the program include: (1) adaptation of ample subject matter information to the local level, (2) presentation of this information through communications materials and techniques which the county agent and local mass media can immediately use, (3) careful cooperation of State staff members and county agents in establishing rapport with local cooperators, and (4) continuous emphasis on one basic idea with variety, imagination, and enthusiasm.

Extension Director W. A. Sutton feels that the program has been highly successful, not only in raising the fertility levels of soils, but in increasing farmer adoption of other extension recommendations for efficient crop production and pasture improvement.

County agents who have conducted programs know that they can effectively use mass communications techniques. Many agents have said that one of the lasting benefits of the program has been its effectiveness in acquainting people with the role of the county agent and the purpose and aim of cooperative extension work.

TEAM EFFORT to improve DAIRYING

by FRED H. MEINERSHAGEN, *Extension Dairyman, Missouri*

"We need a schedule of publicity—one that will emphasize good production and marketing ideas that are timely—a calendar of practices and activities that will point toward better dairying."

"You're right! We need a dairyman's calendar!"

These suggestions came from a conference of dairy leaders in March 1960. The thoughts behind their statements may have been different but they were related in aim.

Industrywide Support

Director of Special Studies and Programs J. H. Longwell invited 40 leaders in production and an equal number from the dairy manufacturing and distributing industry to this conference. They were "to study and evaluate the potentials of the industry in Missouri and to develop, through informal discussion, a dairy program for Missouri."

We were looking for ideas. And the conference provided several—publicity program, dairyman's calendar, short course for dairy plant fieldmen, and suggestions on needed research and proposed dairy legislation.

Let's look at the planning behind the publicity and calendar program.

After the two dairy leaders came up with their calendar idea the group began to solidify plans. A simple wall calendar could relate messages to a time schedule and provide other groups an opportunity to join the effort. If everyone emphasized the same topic at the same time, it would greatly increase the power of the message.

The publicity committee of the Missouri Federation of Milk Producer Cooperatives, along with representatives of manufacturers, planned monthly topics, arranged for printing and art work, and set up the mechanics of the calendar.

Machinery, fertilizer, and feed suppliers were anxious to contribute to the emphasis of each monthly topic.

Determining Emphasis

Seventeen University of Missouri staff members, plus Loren Gafke, manager of the American Dairy Association of Missouri, developed ideas and material for each month. First the calendar pages were planned. Then a folder for each month was prepared. Distribution was to be made by cooperatives, distributors, and manufacturers buying milk from farmers.

At a cost of 17 cents each, nearly 28,000 calendars were printed. Early in December 1960 the calendar was on its way to more than half of Missouri's milk-producing farms.

In late December the first folder, Records Are the Master Key to Successful Dairy Farming, was sent out with milk checks. Each month since then a new folder has been offered to plants and cooperatives for purchase and distribution to their producers.

Nearly 100,000 copies of the first 8 folders were ordered. At this rate, every month 1 out of 4 Missouri dairy farmers receives a folder.

Monthly topics so far included: Records Are the Master Key, Dreams and Plans for Feeding Your Dairy Herd, Market Day is Payday for the Dairyman, Why Do Butterfat and Solids-Not-Fat Vary in Milk? Let's Have Quality Roughage for Our Dairy Cows, Why Is June Dairy Month?, Open the Door to Good Forages, and Buildings and Their Arrangement for an Efficient Dairy Unit.

Planned Publicity

Newspapers, radio, and television have endorsed the idea. And the publicity program behind the calendar has been developing steadily.

Last December a group of dairy plants and cooperatives sponsored a dinner to introduce the calendar program to newspaper, radio, and television editors in the Springfield, Mo., area. More than 60 attended.

A 5-minute movie for each month has been sent to farm editors of 7 TV stations over the State. Radio tapes and news releases pertaining to the topic of the month also have been prepared.

County workers found it easier to give current interest to dairy activities and publicity with this information.

The words, "See your county agent or milk plant fieldman," have brought requests for information from previously untouched audiences. This program awakened new interests.

Interest Tie-in

The Missouri Dairyman's Calendar and information program were begun to serve the entire dairy industry in the State. The calendar provides the central figure in this publicity program to promote interest in the industry.

Typical response to the program and a summary of its value was made by Lloyd Evans of radio and TV stations KGBX and KYTV. "The calendar provides a timely news lead. It gives a common interest between newscaster and farmer. Even an advertising sponsor can be a part of today's topic. It's natural for a united effort to improve dairy production and marketing."

Design for a Central Information Point

by JAMES E. BROGDON, *Entomology Specialist*, and FORREST E. MYERS, *Assistant Director of Extension, Florida*

SECOND only to tourism, agriculture is a major business in Florida. It brings about $850 million to the State annually.

Florida's climate is a boon not only to tourists and agricultural production, but also to agricultural pests. Insects, diseases, nematodes, and other pests of crops and livestock can thrive in it.

This problem calls for the development and use of quantities of insecticides, fungicides, nematocides, herbicides, and other agricultural chemicals. And we must consider residues as well as effectiveness of the chemicals which help produce the high quality, wholesome, nutritious food needed and demanded by today's society.

To answer the needs of its highly specialized agricultural industry, the Florida Extension Service established an information center on agricultural chemicals. Founded in January 1960, the new center is geared to related national and statewide developments.

Development and proper use of pesticides and other chemicals are vital to Florida's agricultural industry. Users are kept up-to-date by the State's central information committee—the Florida Agricultural Chemicals Information Center.

The complex, changing information on chemicals can be made available to all segments of the State's agriculture through extension workers and representatives of other parts of the industry.

Florida had stepped up its emphasis on pesticide residues when the Agricultural Experiment Stations initiated research in this area in 1949. Laboratory facilities were set up at the Main Station, Gainesville, and the Citrus Experiment Station, Lake Alfred. Research entomologists cooperated at each station by applying pesticides and taking samples for residue analysis.

Also during 1949, representatives of several agricultural organizations met to discuss pesticide residues as they affect the State's agriculture. From this meeting emerged the Florida Conference Group.

This organization represents every phase of agriculture including suppliers, producers, processors, handlers, and shippers associated in one way or another with citrus fruit, vegetables, livestock, poultry, and other agricultural commodities. It has been, and continues to be, active at both the State and national level in many actions relating to agricultural chemicals.

In December 1959, the Florida Conference Group made the following request:

"A definite assignment be given some individual or individuals, charging them with the responsibility for following closely all FDA developments, so as to advise the entire Florida agricultural industry when major developments or changes occur for all agricultural commodities, not only with pesticides, but additives and all other related chemicals used by the agricultural industries. In addition, such individual or individuals should establish the best possible liaison with FDA officials at both the state and national level."

Extension was so designated. And from this responsibility grew a varied program of research and information.

Major emphasis has been focused on the Information Center. A more appropriate name might be the Florida Agricultural Chemicals Information Center.

The Center is a committee of extension subject-matter specialists from the areas of citrus and subtropical fruits, vegetables, ornamentals, agronomy, animal husbandry, dairy, poultry, plant pathology, veterinary, and entomology. An assistant director is administrative coordinator. Key representatives of the experiment stations, State Department of Agriculture Food and Drug Laboratories, and the U. S. Fish and Wildlife Service are ex-officio members.

Liaison Assignment

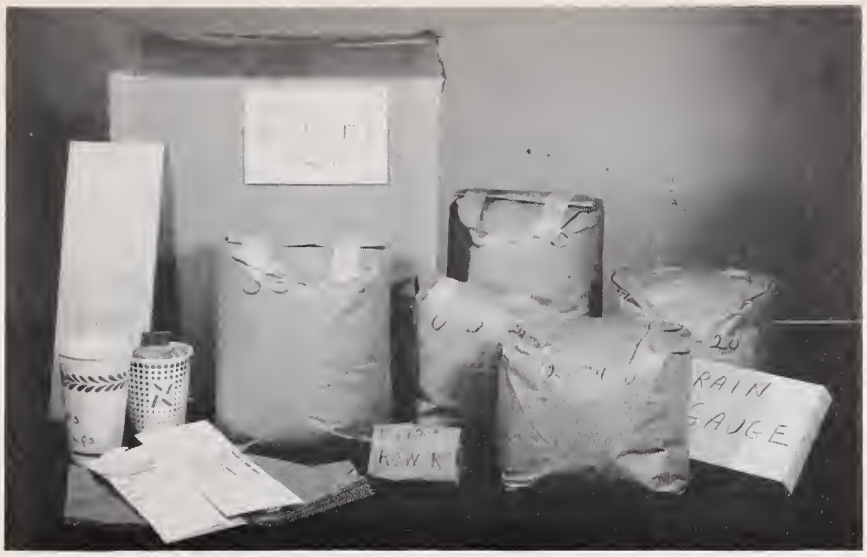
Extension specialists continue their usual leadership, contacts, and programs to get out information through their statewide projects. At the same time they cooperate with the Information Center in quickly making the information available throughout the entire agricultural industry. Industry cooperation and county agents are integral parts of the effort.

The center is attempting to pull together and point up pertinent information from all reliable sources. It is striving for improved liaison through personal contacts, meetings, and contact with State, regional, and national authorities. Its goal is to clarify information and regulatory status, make recommendations, solve problems, create better understanding, and compare related matters.

Chemically Speaking, a periodic news release, is one of the Center's effective methods. The release flags Federal Register entries; cites pertinent publications and releases; points up petitions for tolerances, newly established tolerances, and exemptions; passes along recent pesticide label registrations; and reports on meetings and conferences.

Extension specialists, county agents, State and Federal FDA,

(See Info Center, page 189)



Minnesota county agents were supplied a kit of fertilizer, stakes, insecticide, soil sample cartons, and other material for their field fertilizer demonstration plots.

Soil Fertility Answers in a "Package"

by C. J. OVERDAHL, *Soils Specialist*, and LOWELL HANSON, *Agronomy Specialist, Minnesota*

FARMERS, who are becoming more and more technically competent, expect a wide variety of accurate, specific, and up-to-date information in a number of fields. If extension people are going to provide this information, they must efficiently use both research and extension resources.

The Minnesota situation in soil fertility is probably typical of problems in a number of technical fields in many States. A small research staff, operating on limited budgets, is expected to provide extension people with new, detailed information.

During the late 1950's these were some of the questions being asked for which information was limited:

What is nitrogen, phosphorus, and potassium response on corn with different soil tests when modern corn production methods are used? How extensive is the boron deficiency in alfalfa? How much does potash reduce corn lodging in different soil areas? What effect does dry weather have on fertilizer response and corn yields?

To answer these, soils specialists, agent supervisors, and county agents came up with a program to provide more soil fertility answers and good field demonstrations. This was done by providing county agents with a series of "packaged" materials for fertilizer field plots.

The plot material was planned and prepared by specialists with consultation with the research staff. Establishment, care, and harvest of the plots were the responsibility of county extension staffs.

With a large number of standardized designed plots, three important objectives have been realized: 1) good fertility demonstrations under local conditions and soil types, 2) experience for agents in methods of critically evaluating soils problems and arriving at sound local recommendations, and 3) summary of statewide data by specialists.

This information has been valuable for revising recommendations and for research people in planning more detailed research.

In the past, demonstration plans were available to county workers, but equipment and materials were not provided. Only a few plots resulted, and many were modified because agents couldn't find the right supplies. Often results were poor.

Offering the "package" approach stimulated interest in field fertilizer demonstrations. During 1959, 1960, and 1961, 241 plots have been established on corn and 54 on alfalfa. Of 90 county extension units, 66 have participated in the program.

Refining the Program

The first 2 years of the program were devoted primarily to getting soil test correlation information with corn. In 1961 a "profit possibility" theme has been promoted with the use of a number of rates of appropriate fertilizer combinations. Summary of these results will provide good information for economic analysis by farm management specialists.

In addition to the fertility treatments, current recommended practices for population and weed and insect control have been used.

An example of "package" fertilizer plot kits were those used in 1961. A kit consisted of fertilizer, stakes, calibrated measuring cups, rain gauge, soil sample cartons, herbicide, insecticide, information form for soil type, past crops, etc., and detailed instructions.

A "multi-stage" procedure on the fertilizer plots followed these steps:

- Designed field plots and packaged materials. Distributed them at district extension conferences to demonstrate a subject of major importance. Extension supervisors assisted in the distribution.
- Supplied plot labels and instructions on how to show the plots during growth and at harvest.
- Sent instruction cards at specific times asking for field observations. This leads to more critical evaluations and more accurate conclusions.
- Made available a special miniature display which provided a follow-through of the demonstration by showing results.

The display could be used in the extension office, at meetings, or at

(See Package Deal, page 188)

TAKING STEPS FOR AGRICULTURAL PROGRESS

by JOHN M. SAUNDERS, *Federal Extension Service*

United we stand. Divided we fall. Surely everyone is familiar with this patriotic slogan. It's been applied to nations, teams, clubs, almost any group at one time or another. And it can fit an agricultural industry.

United, or coordinated, efforts of an entire agricultural industry can have more influence and bring about better results than any part of that industry working alone.

Unfortunately, few if any farm products are immune to economic problems. History shows weak moments for nearly all commodities—low yields, poor quality, high production costs, stiff competition, weak markets.

What happens when an industry gets in trouble? What can be done about it?

One answer lies in this united effort we mentioned. When producers, handlers, retailers, wholesalers, government agencies, even consumers work together they can bring about economic improvement of an agricultural industry.

How can such a united effort be achieved. The first step is to bring together all interested groups to take a look at the whole industry—not just one part. They must examine all problems of the industry, analyze alternative solutions, set up an action program, and carry it out.

This kind of effort takes teamwork of a high degree. Extension, research, producers, and industry—all must make their maximum contribution. All must aid in the analysis and planning, as well as in carrying out the program. When all do their part, the entire industry benefits.

The 7-Step Cotton Program is an example of this kind of educational effort. This program is credited with helping cotton retain an important position in the agricultural economy of the South.

Essentially the seven steps in the Cotton Program are applicable to any farm product. The program was worked up jointly by State Extension Services, the Federal Extension Service, other USDA agencies, and the National Cotton Council.

Seven basic steps or key guides were outlined and adopted throughout the Cotton Belt.

Fit cotton into a balanced system of farming.
Follow soil management and cultural practices.
Follow proper insect and disease control practices.
Use adequate and appropriate labor and machinery.
Harvest and gin to preserve staple and grade qualities.
Market carefully.

National, State, county, and community cotton committees were formed to lead and coordinate the program. Each segment of the industry was represented.

Committee Makeup

For example, a committee may have consisted of cotton farmers, an experiment station representative, county agent, agricultural teacher, press and radio representatives, banker, plant breeder, ginner, oil miller, farm machinery dealer, seed or fertilizer dealer, or other members of the cotton industry.

Two major results were obtained by formation of such committees. First, each individual (representing many in his field) was gaining an understanding of cotton's problems—on the whole and as they affected the various segments of the industry.

These committees also served to close the ranks of industry, research, and education to make a united effort to improve the situation. Each segment learned, in this way, how it could support the efforts of the others for the good of the whole.

County cotton committees were encouraged to help analyze their local situation by determining the problems within their own county. Then they helped to plan an educational program designed to correct these problems. The county agent, through this committee, could plan complete cotton demonstrations in which the latest research information could be adapted to fit the local situation.

Educational Methods

In addition to the work of these local committees, educational activities on a wider scale were planned.

A broad-gauged information effort was launched through the press, radio, and other mass communications outlets. News media were furnished with releases designed to acquaint the general public with "facts about cotton," and what could be done to preserve a $22 billion industry.

Research and private plant breeders concentrated on developing varieties with better yields, longer staple, stronger fibers, and better spinning qualities.

County, State, and regional insect and disease control conferences were held annually. Programs were developed at each of these levels to meet current needs.

Special ginning and harvesting schools were held. Gin operators were trained in the adjustment and operation of machinery for maximum efficiency and to preserve lint quality. Mechanical harvester operators were trained in their jobs for the same end results—efficiency and lint quality.

The Whole Farm Cotton Demonstrations, conducted in 9 States on 800 farms, served as inservice train-

(See Steps for Progress, page 182)

Gains for Agriculture Through Cooperation

by FRED R. ROBERTSON, *Acting Director of Extension, Alabama*

IN Alabama we view agricultural programs as a cooperative operation—both building and carrying them out.

By sharing the work to be done with various individuals, organizations, and institutions, we can make the best use of all their efforts and add to the effectiveness of the total extension program. Extension leadership at all levels seeks the active cooperation of leaders in business, industry, and other agencies or institutions in programs of mutual interest. Extension provides technical and organizational leadership.

The staff orientation for such an approach leans toward training county workers and others to perform functions sometimes carried on by extension specialists. Many lay people must hold leadership roles for specific programs.

Specialists must spend a substantial amount of time as teachers of teachers. If county workers are to be most effective as teachers, they must be armed with appropriate teaching material. And specialists must work together to supply agents with this information.

An organization must be carefully coordinated for action. Participants must be brought into all stages of planning and at all appropriate levels to make their maximum contribution.

Working Procedure

Alabama's 1960 cotton program is an example of this procedure.

With low average yields and small allotments, Alabama cotton production had been declining steadily for the past 20 to 30 years. We were faced with the possible loss of $130 million annual income from cotton if this downward trend continued.

So, late in 1959 an intensive campaign was organized to strengthen the State's cotton program. The program had two major goals:

The first aim was to transfer cotton acreage from farmers no longer interested in growing cotton to farmers who wanted to and needed to expand their acreage. (In 1959 about 165,000 acres of Alabama's cotton allotment went unplanted.)

Secondly, the plan was to increase yields and production efficiency so Alabama cotton farmers could compete better with growers in other areas. (Our average yield is only 40 to 45 percent as high as California's.)

The steps taken to plan and implement an educational program for increasing cotton production in Alabama during 1960 illustrate the benefits which can be derived from cooperative efforts.

- A State cotton steering committee, composed of extension personnel in administration, agronomy, economics, engineering, and entomology, was organized to begin planning the program.

- At a statewide meeting in December 1959 the proposed program was outlined and support of other groups was enlisted at both State and county levels. Cotton producers, cottonseed crushers, textile manufacturers, shippers, warehousemen, bankers, agricultural suppliers, and vocational agriculture, FHA, and ASC representatives were invited to participate.

General plans for the program were discussed. All groups attending pledged their wholehearted support to a statewide program.

- Extension specialists in all major phases of cotton production, harvesting, and marketing helped conduct 2-day district workshops for all men county workers. Detailed technical information was given to all county personnel on the various phases of cotton production, harvesting, and marketing. Demonstrations on how to calibrate and use equipment for chemical weed control and insect control were given.

Similar meetings were held with leaders of other agencies. Mimeographed copies of all information presented were furnished each county.

- Entomology specialists organized an insect scouting school and trained cotton insect scouts.
- Special production recommendation letters for growers were prepared and sent to county workers. News stories and other material were given to county workers throughout the year.

Measuring Results

Already we have seen results from the cooperative program. For example:

About 135,000 acres were released by growers who did not wish to plant cotton and were reassigned to other growers.

Despite unusually bad weather, the State's average per acre cotton yield was the second highest in history.

Alabama had a greater percentage increase in cotton acreage planted than any other southern State and was the only southern State to increase its production. Our production was 6 percent higher in 1960 than in 1959.

Farmers received nearly $14 million more for their cotton in 1960 than they would have received if production had followed the trend of other southeastern States.

The cotton program is a measure of the effectiveness of one special phase of Extension's total agricultural program. It indicates the potential for expanding and developing all phases of our agriculture through cooperation with business, industry, and others with mutual interests.

Solving Poultry Problems Together

by T. N. HOBGOOD, *Community Development Specialist, North Carolina*

Editor's Note: The author was formerly Surry County Agricultural Agent, North Carolina.

NORTH Carolina's poultry industry had a problem in 1960. With the coming of the Poultry Inspection Law, condemnation at local processing plants was on the rise.

During 1959, North Carolina had 1⅓ million birds condemned—valued at $750,000. During 1960, $1¼ million worth of birds was condemned at our State processing plants.

Early last year, the condemnation rate was approximately 3.5 percent at the Surry County processing plant. This caused much dissatisfaction among growers, feed companies, field servicemen, and processing plant personnel.

Industrywide Meeting

What was the trouble? What could be done? Because poultry production and marketing has become such a closely knit industry, we needed the understanding and cooperation of everyone involved.

The county extension staff called a meeting to discuss this problem. We invited producers, feed company representatives, field personnel, and processing plant officials.

The county agent opened the meeting by discussing the local problem. The situation was presented, analyzed, and probable solutions suggested to all members of the industry. Everyone concerned ended up with the same concept of the problem and a better understanding of each other's part in the total poultry program.

Poultry Specialist Kenneth C. Bean discussed the causes of losses and where they originated—with the producer, hauler, or processing plant. In the case of Surry County, the largest percentage of the condemnation causes were originating on the farm.

The local processing plant inspector followed on the program. Using birds from the processing plant, he demonstrated why they had been condemned. This really did the job of explaining Federal inspection. It aroused audience participation.

C. F. Parrish, in charge of poultry extension, concluded the meeting with suggestions about what everyone concerned could do to help prevent condemnation of broilers.

This meeting brought out that condemnation was mainly brought about by damp and wet litter. It was shown that supplemental heat in winter helped keep litter dry and prevent roof condensation which in turn caused damp litter.

Demonstration Experiment

Supplemental heat paid off, but it was expensive. And overhead insulation came into the picture.

At that time research information on overhead insulation was not available. But one producer experimented with it during the winter of 1960-61. One 12,000 capacity house was insulated at a cost of 6 cents per square foot. The first brood did so well that he decided to insulate each house as it became empty. The producer now has a capacity of 60,000 with overhead insulation.

Records on the broilers raised in the insulated house last winter showed an improved feed conversion rate. And the producer had a condemnation rate of ½ percent or less, compared with 3 percent the year before.

The processing plant, feed dealers, and service men watched this broiler producer closely. The plant manager now says that overhead insulation is a must for producing top quality birds with low condemnation during the winter months.

The producer with overhead insulation feels that extra profit on the first brood after insulation paid for added costs.

This was a particular problem in a highly specialized area of farming. The techniques—a meeting followed with a result demonstration by one producer—are as old as Extension. But they worked. We went a long way by bringing producers and industry together on a common problem.

STEPS FOR PROGRESS

(From page 180)

ing programs for extension agents. These demonstrations consolidated the contributions of all subject matter specialists concerned with the production and marketing of cotton.

One of the demonstration farms' major aims was to prove that good practices used in combination result in greater total benefits than the sum of these practices used separately.

Other activities included the Five-Acre Cotton Contests and Bale and a Half Clubs, designed to improve quality and lower production costs. They demonstrated the value to be gained by making timely, proper application of all practices proven by research and practical farm experience.

Recording Results

One of the first problems pinpointed through the program was the great number of varieties grown and the mixing or mongrelizing of these in the field or at the gin. In the early thirties some 500 different varieties and strains of cotton were being planted across the cotton belt. Most were inferior in quality, staple length, and strength.

Today 90 percent of cotton acreage in the Cotton Belt is planted to 12 varieties—all of which have good yields and fiber properties.

As a result of this concerted educational program, cotton is fitted into balanced farming operations, utilizing labor and other resources efficiently. And more and better cotton is being produced throughout the Cotton Belt.

Call it concerted action or just plain teamwork, as you prefer. The point is that when a whole industry works together to improve a farm product's economic situation, the results can be highly satisfactory to all concerned.

Planning a TEAM APPROACH to CONTROL MASTITIS

by M. F. ELLMORE, *Dairy Specialist, Virginia*

Bovine mastitis is a universal dairy problem. Total cost of this disease to U. S. dairymen is well over $250 million per year.

Attempts to control this disease through the indiscriminate use of drugs has been futile. And the problem is complicated by drug residues which appear in the milk of treated cows. The presence of these residues in market milk is a violation of pure food laws.

These are some of the reasons why the mastitis problem has received so much attention in the past 10 years. These are also reasons why Virginia dairymen initiated and organized a statewide program to reduce the incidence of mastitis.

Call to Action

In 1958 the Virginia Dairymen's Association sponsored a conference to study the mastitis situation and to consider its implications for the State's dairy industry. Sixteen organizations and agencies directly concerned with the industry were represented.

The conference resulted in general agreement that the mastitis problem was great enough to warrant an organized effort to reduce the incidence. So the Virginia Mastitis Prevention and Control Committee was organized.

The committee included representatives of Virginia Dairymen's Association, Virginia Dairy Products Association, Virginia Federation of Milk Producers, Virginia Dairy Fieldmen's Association, Federation of DHIA's, Virginia Artificial Breeding Association, Virginia Veterinary Medical Association, five Virginia Purebred Dairy Cattle Clubs, Virginia Department of Agriculture, V.P.I. department of vocational agriculture, and Extension.

Since this experience, we suggest to others that recognized program development principles should be followed in organizing such a program.

For example, it is wise to limit representation to groups which have an active interest in solving the problem and can make a real contribution. Invitations should be extended to organizations, not specific commercial concerns. Representatives of these organizations should be appointed by each organization.

The sponsoring group will probably be too large to carry out all of the details that go with sound program development. Subcommittees are the answer.

If possible, each member of the sponsoring group should be included on some subcommittee. This will help keep up interest through involvement. Special talents among the members should be used. A member of the extension team should be included on each committee as an advisor.

A program planning subcommittee studied the problem in detail and recommended a long time program. This was developed after studying the characteristics of the disease, the programs of other States, and the resources available to tackle the problem.

The proposed program had two parts: (1) education in prevention and control, and (2) regulations to remove the resistant or scattered sources of infection. Major emphasis was to be on education.

It is known that 70 to 80 percent of the mastitis cases can be prevented. Misinformation concerning the nature of the disease and its treatment, plus lack of knowledge needed to prevent it, pointed toward an aggressive educational program.

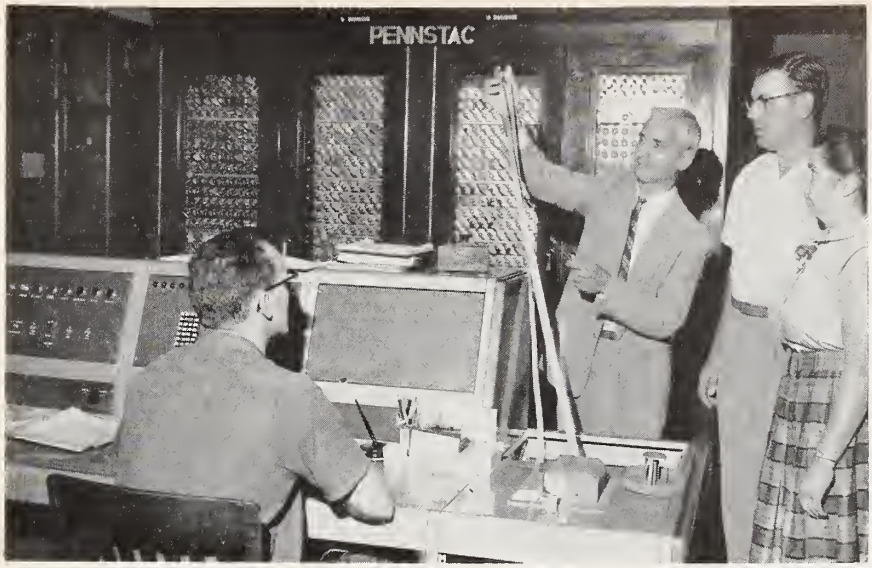
Adopting a Plan

The education subcommittee recognized that reduction of the incidence of mastitis could be achieved only by the people who manage and care for the herds. The attitudes, knowledge, understanding, and skills of these folks had to be changed to lick mastitis.

As the program moves to the field, industry folks must be kept informed and involved. They have a great influence on and daily contact with farmers.

It is important that all tell the

(See Mastitis Control, page 186)



"Pennstac," electronic computer tested in Montgomery County, Pa., produced mathematical details for getting the best results through farm management. James Becher, farm management specialist and Mr. and Mrs. John Gehman, one of the first families to use this program, check results coming off the computer.

Electronic "Hired Hand" for modern farm problems

by MARION DEPPEN, *Montgomery County Agricultural Agent, Pennsylvania*

EIGHTEEN months after "Pennstac," Penn State's electronic brain, calculated a path to greater farm income, dairy farmer John Gehman said, "I earn $4 per hour milking cows."

This was a result of linear programming—a mathematical method of maximizing farm income. This new tool has proved to be an effective farm management extension demonstration.

To the two Montgomery County farm families involved, it has meant planned progress. These two dairy farm families were selected for the demonstration as followup on farm and home planning indicated more information was needed to increase farm income in the most practical way.

Scores of details on the farming operations were assembled—size, soil fertility, labor limitations, amount of capital, extent of credit, production per cow, feed costs, price of milk. These and many other facts were fed into the electronic brain.

"Pennstac" flashed, calculated, and punched. Out came details of possible profitable farm organization.

Electronic Analysis

Dr. James Becker, extension farm management specialist at Penn State, was teamed with the author on this demonstration and reviewed all the answers. The facts and figures showed that most profit could be obtained by milking a large number of high-producing dairy cows.

As a result turkeys were dropped on the Gehman farm. Dairy cow numbers were gradually increased from 50 to 96. Grain was purchased for feed. Emphasis was placed on producing milk in as large a volume as possible.

The plan showed the 125 acres of cropland would be used best by first producing silage, then pasture (green chop), then hay, and lastly corn for grain.

The large turkey pen became the loafing area for the cows with some alterations. Silage storage was added.

The results were a spectacular increase in farm income with slightly less family labor and no additional hired help.

On the second farm the 150-year-old barn was remodeled to hold 60, rather than 40, cows. Here, as on the Gehman farm, linear programming indicated most profit by maximizing the number of high producing cows. Broilers were dropped and additional land was used for high producing silage crops.

Combining Know-how

The success of these linear programming demonstration farms was the result of a team approach—the farm management specialist, the resident staff operating "Pennstac," and the county agent. Farm organization and management principles learned through these linear programming demonstrations have been used in helping many other dairy farmers solve problems.

Linear programming, along with farm and home planning, has meant planned progress for many county farm families.

The need for effective farm management programs is acute in our county which borders Philadelphia. Farm real estate is valued from $400 to $2,000 per acre. Taxes are high, as are other costs, but markets are good. These facts necessitate top-notch management.

A recent countywide survey of farmers indicated they want the county agent's staff to give first priority to assisting farmers in solving farm management problems.

We are sure that we have helped many farm families achieve improved farm management. We will continue to develop and promote farm management programs to assist in increasing farm income and security for farm residents.

Sheep Improvement Program Changes the Picture

by J. R. STAUDER, *Sheep Specialist, New Mexico*

TWENTY years ago, New Mexico's products of the sheep and wool industry were nothing to be proud of. Fleece weights averaged only 5½ pounds. Lambs weighed 50 pounds at weaning time. Lambing percentages were 60 percent or worse.

Today the picture has changed completely. New Mexico cooperators' fleeces average 15 to 20 pounds. Lambs are up to 80 to 90 pounds weaning weight. Lambing percentages run 100 percent and over.

How has this great change come about in such a relatively short time? The answer is a sheep and wool improvement program founded by the experiment station and plugged hard in the field by extension specialists and county agents.

Briefly, here's the way the sheep and wool improvement program works. Sheep are classified as "Supers," "A's," "B's," and "C's" according to the staple length-for-grade of their wool, body size, density of the fleece, and other traits of economic importance. The best are bred to the best, and their offspring are kept for replacements.

Rancher Approval

Ranchers have become thoroughly sold on this cooperative program—an example of teamwork between research and extension. The results themselves helped to sell the program. Beginning cooperators were the program's strongest boosters.

But it requires continuous training to keep ranchers abreast of new research and methods. New Mexico is keeping sheepmen on their toes through a broad program.

County and statewide on-the-ranch demonstrations by agents and specialists are continually used to teach the sheep classification system. These demonstrations are carried out on a herd that has never been classified. Certificates are issued to ranchers who successfully classify sheep.

In 1958 a new tool, the wool squeeze machine, was incorporated into the demonstrations at shearing time. This machine, developed by the experiment station, computes the clean fleece weight of a greasy fleece by compressing it.

One-day clinics are often held in conjunction with the sheep classification demonstrations to present the latest management research.

Two annual statewide sheep and wool schools are held each year. One, held during the annual convention of the New Mexico Wool Growers, presents latest research in sheep husbandry and wool technology. The other, held at the university each summer, covers a wider field of interest. Practical grading of 100 to 150 fleeces, representing different areas of the State and including wools of all lengths, fineness, and shrinkage, are used in this school.

Wool schools are also presented on the county level (using 20 to 30 fleeces).

Exhibition of growers' top fleeces in the State wool show affords comparison, creates interest and competition, and promotes the sheep improvement program. Between 200 and 250 fleeces are entered each year.

The range sheep show at the state fair was initiated in 1955. It was the first statewide sheep show that emphasized a strictly range conditioned yearling sheep. This show affords an opportunity to exhibit and compare, create interest, and educate growers to the advantages of a selective breeding program.

An annual sheep and range tour allows growers to observe the stock and facilities of fellow sheepmen.

Sheep breeding practices and management methods are discussed by the ranchers. This tour provides another opportunity for sheep growers to exchange views.

The Sheepherders Special, monthly letter of the extension sheep and wool marketing specialists, carries news of events, meetings, and items of interest to county agents and wool growers.

This year extension added a new field of education to its projects of range sheep management, fat lamb, farm flock, etc. A statewide 4-H wool-grading and wool-judging contest roused interest and competition.

This close cooperation between researchers, specialists, county agents, and ranchers, increasing the efficiency of production, has been worth several million dollars annually to the total sheep and wool industry.

As part of the State's detailed sheep and wool improvement program, short courses at New Mexico State University offer ranchers an opportunity to practice grading.

AREA ASSIGNMENTS

(From page 172)

ings with the county court judges (decision-makers on allocating county monies); development of planning committees in each of the specialized program areas; meetings with larger groups of key leaders to explain the proposed changes; and finally, explanation by extension agents to the general public.

Obviously policies, operating procedures, administrative accountability, and other such things were modified to fit new geographic assignments.

All persons in these groups had ample time to study the proposal, raise questions about it, make suggestions, and finally express their approval or disapproval. The attention placed on clear, accurate, and complete communication over many months appears well worth the time and effort, since there have been relatively few serious problems.

Testing Aims

The purpose of all this attention to administrative structure, personnel assignments, and other facets of its operating environment is to increase the probability that the Extension Service staff will succeed in developing the ability, capacity, and desire of the people with whom they work to make decisions *for* themselves, although not necessarily *by* themselves.

This should result in their being able to attain to the fullest degree and in the most efficient and effective way possible their individual and collective objectives. The processes through which people go to accomplish this will result in improving their ability to think clearly, comprehensively, and in greater depth, then take action on things of importance to them, things which affect their welfare and the welfare of their families, their communities, and their nation.

Creating flexibility, but maintaining direction in organizational structure, policies, operational procedures, and personnel assignments, and sustaining a high level of sensitivity to the needs of the present and future is the minimum that may be done to accomplish this objective of the Extension Service.

Each facet of the operating environment in which extension personnel work must be a function of and not a determinant of our educational programs. Making certain that this happens is a responsibility of every extension worker, and this takes constant alertness.

MASTITIS CONTROL

(From page 183)

same story. Recommended practices must be sound and understood by all. This is where the editorial subcommittee performs an essential function.

The effectiveness of our extension efforts can be increased through this method. There will be members of the sponsoring organization in nearly every county. The county agent can use this talent just as effectively as it can be used at the State level.

This team approach does not lessen the amount of work for the extension staff, but the nature of the work will be different and our efforts can be multiplied many times.

Our first year's plan consisted of publishing and distributing general information about mastitis and its prevention. This material was to arouse interest and increase general knowledge and understanding of the subject.

A second part of the plan was to work with the professional personnel who would be involved. This included the membership of cooperating organizations. These people have daily contact with dairymen and a direct interest in their welfare. Veterinarians, fieldmen, sanitarians, vocational agricultural instructors, and others would be involved.

Because so many people are making recommendations to dairymen, it was considered essential that all information released, regardless of its form, should be consistent. So an editorial subcommittee was appointed to edit all published material to insure uniform recommendations and that no statements were contradictory.

A program seal was developed and printed on each approved publication. The seal enables anyone to distinguish between material published for the committee and any other material.

The educational plan has been carried out on schedule. By July 1, 1961 the volume of material exceeded 300,000 copies. Although this is not a measure of progress toward the objective, it gives an idea of the scope of the effort and its potential impact.

The type and purpose of material prepared included:

- A series of monthly fact sheets for dairymen—16,000 are distributed each month through county agent mailing lists.
- A large chart for dairy barns—10,000 of these were distributed outlining the recommended procedure for managed milking.
- Herd management survey form and guide—primarily for professional workers who make farm visits.
- Vocational agriculture lesson plan—for teachers.
- Guide for county agents—in planning county programs.
- Slide series and script—available to any group through district agents, area supervisors of vocational agriculture, or VPI Extension Service.

Program Support

Every organization on the State committee has cooperated wholeheartedly. The Virginia Dairymen's Association, the initiating organization, provided an executive secretary and financial support. Other industry representatives have given their time and travel.

Extension has paid the printing costs to date. In addition, many cooperating organizations have reprinted the educational material in their house organs.

The process moves slowly. The more people that become involved, the greater becomes the task of keeping them involved, informed, and interested.

Extension workers must be careful to give lay leaders the opportunity to express themselves and to develop leadership.

Our success so far has made us more determined to continue the effort. During 1961 emphasis has been on managed milking. Major emphasis is also directed toward more intensive program development at the county level.

Approaching Dairy Problems as a Team

by DR. STANLEY N. GAUNT, *Animal Husbandry Specialist, Massachusetts*

THE easy, the simple problems were solved yesterday. The cost-price squeeze is tightening, problems are more complex. In other words, dairying is more specialized today.

More than ever the answers to many dairymen's problems lie not within just one subject matter area or department, but from the most profitable combination of practices, resources, and managerial ability. The extension dairy program should be integrated and coordinated to meet dairymen's needs.

This has been our approach for many years in program development under the direction of our Massachusetts Extension Dairy Committee. The committee includes extension personnel and heads from each department of the university concerned with dairying, plus three county agents.

Each spring we ask our county agents to determine (by survey or county dairy committee meetings) the special needs of the dairy industry in their counties. These are summarized and presented to the State committee.

The committee selects 3 or 4 areas needing the most attention for special emphasis. Many other phases of dairy extension work are covered, but our efforts are concentrated on these special areas.

In our program this past year, the four projects of special emphasis were: Farm Business Management, Forage Evaluation and Feed Adjustments, Mastitis Control, and Sire and Dam Selection. In each case the project included personnel from more than one university department.

The State program is printed and distributed to county agents at a statewide meeting in the early fall, with an outline of the various steps to put it into operation. Then it is presented to each county dairy committee to secure their support.

In addition, counties are encouraged to develop special projects of their own, such as organized tours, special events in the markets, coordination of county dairy breed and organization activity, and plans for adapting the State program into the county situation.

Quality silage is, one of the Massachusetts Extension Dairy Committee's priority projects.

A Team Project

This whole program requires teamwork to be effective. A good example of this is the integration involved in forage evaluation and feed adjustments.

Under this program, the agronomy, control service, and dairy and animal science departments determine the feed value of forage samples submitted by dairymen through various tests. They interpret the analysis in terms of how the dairymen can use this information.

County agents work directly with dairymen on the use of this information in making feed adjustments. Lastly, we gain information from this project which is valuable to our departments in helping convince dairymen of the practices that are most effective.

How effective was this team project? Results of 2 years work show it to be quite successful.

Over 850 samples of hay, corn, and grass silage were analyzed each year. Many dairymen will testify to its value as is verified in an article on the project which appeared in a national dairyman's magazine last year. It was of special help to dairymen in Dairy Herd Improvement Associations in securing more accurate grain recommendations.

Dairy Digest

Another highly effective phase of the overall dairy program is our Massachusetts Dairy Digest. This is a monthly publication reaching 2,475 dairymen and leaders with latest information on research and dairy developments. The Digest gives us an opportunity to come onto each man's farm each month with suggestions or ideas that aid him in his day to day operations and in planning for the future.

Again, the key to success of this publication has been the team effort.

(See Dairy Team, page 189)

PACKAGE DEAL

(From page 179)

business places. Along with field meetings, this display increased the mileage of the "message." Mimeographed pick-up sheets explaining the purpose of the plot and the results, including profits and soil test relationships, accompany the display.

The National Plant Food Institute has defrayed costs during the past 3 years. The Minnesota Fertilizer Industry Association provided the fertilizer, and students assembled the packages.

Writing instructions and arranging materials for the packaging was time consuming. However, the large volume of requests (79 in 1959, 120 in 1960, and 96 in 1961) and resulting data increased efficiency.

Packaging has expanded the past year to include exploring for boron and sulfur needs on alfalfa and correcting zinc deficiency on corn. These "quickie kits" (small packages to be carried in cars) have been used effectively in spotting smaller and less obvious nutrient troubles on growing crops.

Farms are becoming larger and more specialized. Therefore, sharper communications, including local field results, are necessary. Plot work has yielded considerable data and allows the intimate contact and experience needed.

As a result of the program, we have gained vital, new information. Average phosphate and potash corn yield increases were large on low testing fields and suprisingly small on fields with medium and high tests.

A 13-county area demonstrated boron deficiencies on alfalfa—more than was expected.

The percent yield increase over the check due to fertilizer was 23 for dry conditions and 19 with good moisture conditions.

The effect of potash was as important in reducing lodging on some soils as it was in increasing yields.

Three years of experience have shown that a coordinated program of field plots can go a long way in providing the answers that modern farmers and agents are looking for.

A much larger audience was reached with displays, like this one from Dodge County, than through field demonstration meetings alone.

AREA SPECIALISTS

(From page 173)

cording to the major subject-matter needs of those sections.

How do the area specialists work? Their assignments are similar to that of State specialists. They serve a smaller area, conduct more sub-district and county meetings with agents, meet and plan with more program building committees, train more leaders, assist directly in planning and setting up demonstrations, and write news releases that can be adapted for county use. They conduct short courses and coordinated programs, often involving all of the specialists at one headquarters on a combined program.

This gives a "grass roots" approach to the whole effort. Agents and local leaders feel that this approach meets local needs better than general recommendations from State headquarters. Area specialists are closer to the situation and are able to identify problems needing research, thus providing a two-way flow of information. They do not prepare as many publications as their associates in the State office.

How are they trained and coordinated? A subject-matter project leader on the headquarters staff is assigned the responsibility for initial orientation and training of new area specialists in extension philosophy, methods, research now in progress, and other pertinent information. Each is provided orientation experiences.

At conferences, held several times a year at headquarters, all area and headquarters specialists in a subject-matter area, the department head, and research personnel combine their efforts and coordinate programs. State specialists in each subject-matter area concerned visit and train the area specialists in their areas or districts. Travel schedules and field itineraries are developed with district agents at the assigned headquarters, by correspondence and at staff conferences.

This is our approach. It isn't the whole answer, but it is working well. The area specialists plan gives greater returns for the resources and keeps agents better informed since there is a technical specialist available on a "grass roots" level. This specialist knows the local situation intimately and can respond quickly to educational needs in the counties. The system is helping us to provide a more effective agricultural program for all of the people.

TRANSITION

(From page 171)

The traditional role of Extension needs to be expanded to encompass other areas than productivity, including business management decisions. Along with the tremendous growth of agribusiness has come a shift of functions from farmers and homemakers to business firms. Yet the latter, too, need management assistance.

We must place more emphasis on the problem-solving approach. Many of the problems we are asked to provide assistance in solving are so complicated that a team approach, involving a number of disciplines, is needed. From now on, we must be prepared to be at home with complexity.

According to a report from the Bureau of the Census of the 1959 Census of Agriculture, "Much greater specialization and commercialization in the production of many farm products occurred during the last 5 years than during any 10-year period recorded by the farm census."

Should not Extension take its cue from this? We must build our own future—otherwise we will be engulfed by it.

Turning with the Tide

by PAUL YOUNT, *Poultry Specialist, Mississippi*

COUNTY agents play a vital role in today's highly complex agricultural industry. It's an active role, changing constantly in the skills demanded.

In recent years, we've seen agents' audiences vary and the requests for assistance grow more complex.

And he must turn with the tide of progress. For example, look at the county agent's changing role in the poultry business in Mississippi.

As late as 1945 more than 90 percent of the requests for information and assistance from the extension poultryman were from home agents.

Farm women called on these agents for help with the simple management problems of their small "home" flocks. When the home agent needed more information, she checked with the extension poultryman. When he needed more information, he checked with research men at Mississippi State University.

Commercial Growth

By 1950, with increased interest in commercial production, more than 90 percent of the requests for information and assistance from the extension poultryman were from county agents.

Farmers called on the county agent for help with the more complex management problems of his commercial enterprise. When the agent needed more information, he checked with the extension poultryman. In dealing with the problems of commercial poultrymen the extension specialist relied more and more on MSU research men. He also began to contact outstanding authorities at other experiment stations and with large commercial companies.

By 1955 our poultry industry was highly integrated and many producers were operating on a contract basis. Advanced technology required highly trained field supervisors who were furnished by the large operators.

These men visited producers at least once a week. County agents were seldom asked for assistance with management problems. And the extension poultryman was making more referrals to outstanding experts at other institutions or with large, nationally recognized companies.

By 1960 practically all Mississippi broiler growers and producers of hatching eggs were operating on a contract basis. Volumewise, most of those producing table eggs were on contract, too.

More than 150 servicemen were working for the contractors, on call 24 hours a day. Practically all of them had college degrees in poultry; many had master's degrees in poultry, also. These men kept up to the minute on the highly technical information necessary for success in today's commercial poultry business.

Agents' New Duties

All these changes had a definite effect on the county agent's job. As related to our commercial poultry industry, his job is bigger and more complex.

The county agent serves as counselor, adviser, and organizer.

The farmer who comes to his office now wants to know the cost of going into the poultry business, probable dollar returns, and what contracts are available.

The poultry contractor who comes to the agent's office today wants to know about prospective growers. He may ask the agent if he can explain his program at a farmers' meeting. The contractor may want the agent to call a conference of other poultry managers, bankers, businessmen, and leaders to discuss credit, markets, area development, or other problems.

Today the county agent can perform his job well in calling meetings, arranging conferences, producer schools, or workshops. He can head up surveys, tours, field days, and other educational events. He can help plan for and achieve group and area facilities and programs.

The county agent today is a liaison man and a leader in the poultry business. His job is bigger than ever.

DAIRY TEAM

(From page 187)

Each issue carried feature columns in several subject matter areas—veterinary, feed, agricultural engineering, economics, dairy trends, and a county agent's column. In addition to these regular features, articles by other specialists in other fields are used also.

The county dairy committee also plays a key role in determining the success of the program. These county committees are composed of leading dairymen in each county; representatives of the dairy organizations; breed, feed, marketing, and cooperative dairy groups; and veterinarians.

We encourage the committees to add members each year. This helps bring in new leadership, younger men, and gains greater support for the program.

We believe our team approach in planning offers an excellent opportunity to our State extension workers and county agents to develop effective programs. It's up to each of us to take advantage of the teamwork.

INFO CENTER

(From page 178)

USDA, experiment stations, and industry people supply information for the releases. They are assembled by the extension entomologist and the assistant director on the committee.

Each week or two, Chemically Speaking is distributed to a mailing list of nearly 500 individuals and organizations. County agents, Florida Conference Group designees, college and experiment station workers, and several key agency people receive the release.

These recipients, in turn, are responsible for reproducing the material for their clientele. This is being done completely or in part by many individuals and organizations.

Other effective activities are being undertaken by organizations, committees, and individuals, often in connection with the Information Center.

It is generally felt that the Agricultural Chemicals Information Center has made considerable progress and is making a very worthwhile contribution to the overall effort to the wise use of chemicals.

Farmers Favor Night School Sessions

Following night school classes on new agricultural information, Virginia farmers and other "students" held informal discussions with their instructors.

VIRGINIA farmers tried going to night school last winter and heartily approve this method of learning about new agricultural information.

In place of the usual day-long school, Culpeper County planned night sessions for their farmers. Two 1-hour sessions were held at the local high school from 7 to 9 p.m. each Tuesday during February.

The school was unique, not only in the approach but in the preparation beforehand. Local leaders did nearly all the planning and coordinating. Local commodity committees endorsed the night school idea and selected topics and speakers.

School officials and the Culpeper County Extension Board of Agriculture also supported the new venture.

Enrollment forms were sent to the county farmers, businessmen, bankers, feed and fertilizer dealers, and other interested groups prior to the school. These forms, indicating which classes the "students" wanted to attend, were to be returned before the first meeting.

Four sections had been arranged—one each for agronomy, farm management, dairying, and livestock. Each farmer attended two classes of his choice each evening.

Virginia Polytechnic Institute specialists served as class instructors. At the end of the last class period, these instructors opened an informal questioning session. A local farm service organization provided refreshments during this get together.

Attendance averaged almost 145 at each meeting. A total of 578 attended the four meetings.

Farmers rated this school "excellent" on evaluation sheets. They asked for another of the same type next winter.

by R. D. MICHAEL, Editor, Virginia

Teaching Via Special Short Courses

CONVENTIONAL farm meetings, like the old Model T, are being replaced with new models.

Take this Michigan newspaper announcement for example: "Training classes arranged for Delta County poultrymen this week will include 20 hours of study of production and marketing phases of the industry."

This was not an ordinary farm meeting.

The one-shot meeting, where rural people gather to get the latest word on chemicals, furniture repair, etc., seems to be giving way to the meeting series. In a sense these are locally adapted off-campus short courses. A subject matter specialist uses a depth approach and becomes a teacher, not just the speaker for the evening.

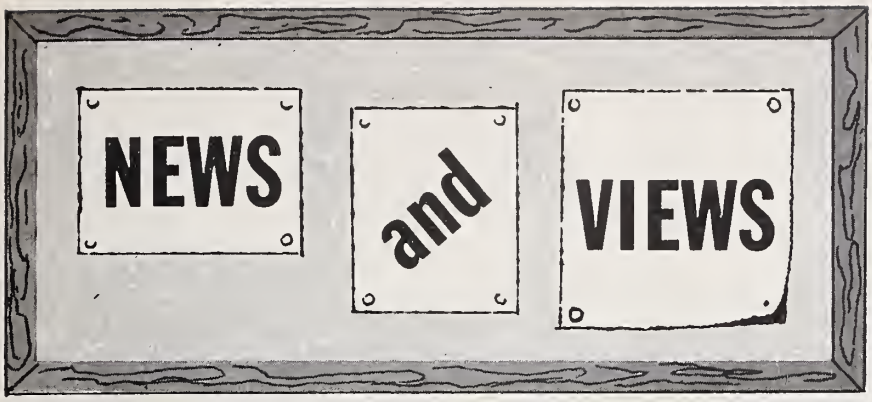
A night class program in Michigan's Upper Peninsula started when Dickinson County Extension Director Frank Molinare arranged a 4-meeting course on soils. Similar adult classes on forestry, dairying, and poultry management have been held in other U. P. counties. And comprehensive livestock short courses have been held in other parts of the State.

Why are people digging deeper for information? "In this day of specialization, they are interested in the why as well as the how," reasons Molinare. Turnout for the soils classes was so good that he planned others on forestry and dairying.

U. P. District Director Daniel W. Sturt says, "Greater concentration on a particular subject matter area is a must if people are to achieve the level of proficiency essential to competing in the modern world."

The willingness, even eagerness, to "dig a little deeper" is reflected in the popularity of detailed short courses on specialized agricultural subjects.

by JAMES W. GOOCH, Information Specialist, Upper Peninsula, Michigan



White House Secretary Addresses Agents

Andrew T. Hatcher, associate press secretary at the White House, was guest speaker at the 10th annual meeting of the National Negro County Agents Association.

Hatcher addressed the agents at their annual banquet during the convention held in July on the Oklahoma State University campus, Stillwater.

Other speakers included: Dr. O. S. Willham, OSU president; Dr. A. L. Darlow, OSU Experiment Station director; W. L. Foreman, National Cotton Council president; Carl Neumann. National Live Stock Meat Board general manager; A. S. Bacon, Federal Extension Service; Richard Bowman, assistant director, Peace Corps; and Vernon E. Burnet, Farmers Home Administration.

Delegates were conducted on a tour of the heart of Oklahoma's wheat section. The tour concluded with a barbecue dinner on a ranch.

BOOK REVIEWS

PRINCIPLES OF GENETICS by Eldon J. Gardner. John Wiley & Sons, Inc., New York, 1961. 366 pp., Illus.

Principles of Genetics was written primarily for the college student taking his first course in genetics. Nevertheless, extension workers and all others interested in scientific methods for improving plants or animals will find this book instructive and interesting.

The book stresses principles but contains numerous examples which illustrate practical applications.

Starting with Mendel's experiments, the author defines and discusses the basic principles of genetics, cells, heredity, interaction, genes, chromosomes, linkage, crossing over, mutations, alleles, and compound loci.

Separate chapters discuss physiological genetics, population genetics, and systems of mating.—*Jas. E. Crosby Jr., Federal Extension Service.*

HOW AGRICULTURE OPERATES—IN PRODUCTION—IN MARKETING, edited by Lee Kolmer and George W. Ladd. Iowa State University, Ames, Iowa. 1961.

Are you looking for cost-price facts to use in talks, news articles, radio and TV programs, and exhibits? How Agriculture Operates—in Production—in Marketing attempts to explain the major causes of the cost-price problem facing farmers.

The publication (report No. 6 from the Iowa State University Center for Agricultural and Economic Adjustment) was prepared primarily for teachers, extension workers, and others engaged in adult education work. It's packed with facts and trends affecting American agriculture.

Chapters cover: how characteristics of individual farms and agriculture as a whole affect the cost-price squeeze; marketing, demand for farm products; foreign trade; what causes farm prices and incomes to vary; and how the prices farmers pay are affected by growth in consumer income, technology, and characteristics of farm firms.

The report can be purchased from Iowa State University Publications, Morrill Hall, Ames, Iowa.

Monthly Revisions in Publications Inventory

The following new titles should be added to the Annual Inventory List of USDA Popular Publications. Bulletins that have been replaced should be discarded. Bulk supplies of publications may be obtained under the procedure set up by your publication distribution officer.

F	1787	Internal Parasites of Swine—*Revised 1961*
F	1798	Control of Common White Grubs in Cereal and Forage Crops—*Slight Revision 1961*
F	1861	Insect Pests of the Peach in the Eastern States—*Reprint*
F	1893	Control of Grape Diseases and Insects in the Eastern U. S.—*Revised 1961*
F	2108	Cut the Costs that Cut Your Farm Profits—*Revised 1961*
F	2161*	Your Farm Renting Problem—*New*
F	2162*	Your Farm Rent Determination Problem—*New*
F	2164*	Your Farm Lease Contract—*New*
F	2166	Swine Production—*New (Replaces F 1437)*
F	2167	Family Farm Records—*New (Replaces F 1962)*
F	2168	Controlling Potato Insects—*New (Replaces F 2040)*
G	24	Clothes Moths and Carpet Beetles—*Revised 1961*
L	341	The Meadow Spittlebug—How to Control It—*Revised 1961*
L	490	Caponizing Chickens—*(Replaces F 849) New*
L	492	The Common Liver Fluke in Sheep—*New*
L	493	Liver Flukes in Cattle—*New*
L	494	The Armyworm and the Fall Armyworm—*New (Replaces F 1850 and F 1990)*
MB	18	Food is a Bargain—*New*
M	836*	Your Cash Farm Lease—*New*
M	837*	Your Livestock Farm Lease—*New*
M	838*	Your Crop-Share-Cash Farm Lease—*New*

* Replaces F 1969 and M 627

The following publications have been discontinued by the Department and are no longer available.

F	1291	Preparation of Fresh Tomatoes for Market
F	1870	Pruning Hardy Fruit Plants
AB	98	Loose Housing for Dairy Cattle

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(GPO)

fruits and vegetables

In Season Every Season

SUMMER, winter, spring, or fall—any season of the year can be the right season for fruits and vegetables.

It wasn't too long ago (20 years or less) that our fruits and vegetables were available only on a seasonal basis. Melons, berries, tomatoes, and many others were almost unheard of out of season.

Today you can get most fruits and vegetables readily almost year round. How has this come about? Technology. Modern methods of production, harvesting, processing, storage, and transportation have changed the picture.

Take any one of these scientific advances and you'll find consumers' wants and needs played an important role in initiating the changes.

Consumers expect and enjoy fresh vegetables and fruits all year. Modern refrigeration, transportation, and marketing methods provide these foods farm-fresh at all times.

Overall Improvements

Not only the availability, but the quality, variety, and wholesomeness of our fruit and vegetable supply are unequaled in the world.

Quality control begins on the farm with variety selection. In production, the latest research is used to increase yields, reduce costs, and reduce damages and losses from insects and diseases.

New packaging methods contribute to food quality. Polyethylene bags, for example, retard moisture loss and keep produce fresh, clean, and attractive. Refrigeration in retail stores also helps to maintain food quality.

Food variety today is almost unlimited and seasonal eating habits are almost unknown. Dried, fresh, frozen, canned, even flaked forms of foods are available at all times.

In many instances the price for a frozen or processed product is about equal to or even less than the cost of the fresh product. The savings come in reduced waste, dependable quality, and convenience in preparation.

Today's homemakers, pressed for time in preparing meals, ask for and are willing to pay for high quality convenience foods—frozen juice concentrates, easy to prepare fruits and vegetables.

American consumers can buy food with confidence, knowing that it is the safest, cleanest, and most wholesome in the world.

Eighty-five percent of all fresh fruits and vegetables marketed are packed according to Federal Government grade standards. Ninety percent of the frozen and 23 percent of the canned fruits and vegetables are also sold under Federal grades.

Research shows that conditions that keep fruits and vegetables fresh and attractive usually help them retain their nutritive value. Spinach may lose as much as half its Vitamin C value in 3 days at ordinary room temperature. But proper cooling reduces this loss.

More for the Money

Each American, in 1960, consumed (plus other foods):

204 pounds of fruits
203 pounds of vegetables
103 pounds of potatoes
6 pounds of sweet potatoes

And actually, all this good food costs us less than ever before. In 1947-49, food expenses took 26 percent of our disposable income. Today it takes only 20 percent. In addition, our disposable income is half again as large.

The availability, quality, variety, and wholesomeness of our fruits and vegetables on an almost year-round basis have improved materially. We can look for technology to improve food even more in the future.

Modern farm production and marketing will continue to provide us with a basic requirement of good health—nutritious, wholesome food in plentiful supply.

Are you telling America's greatest success story—the story of agriculture—to nonfarm groups in your area? This is No. 5 in a series of articles to give you ideas for talks, news articles, radio and TV programs, and exhibits.