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EXPERIMENT STATIONS

# ALFALFA

Excerpts from 1925 Annual Report  
State and County Extension Agents

Compiled by M. C. Wilson and O. S. Fisher



UNITED STATES DEPARTMENT OF AGRICULTURE  
Extension Service.....C. W. WARBURTON, Director  
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Washington, D. C.



Alfalfa

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Excerpts from 1925 Annual Reports of State and County Extension Agents

Compiled by M. C. Wilson, In Charge, Extension Studies, and  
O. S. Fisher, Extension Agronomist, Office of Cooperative Extension Work

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Cooperative Extension Work in Agriculture and Home Economics  
United States Department of Agriculture and  
State Agricultural Colleges Cooperating

Dear Sir,

I have the honor to acknowledge the receipt of your letter of the 15th inst.

and in reply to inform you that the same has been forwarded to the proper authorities.

I am, Sir, very respectfully,  
Your obedient servant,

J. H. [Name]

Introduction

During the past year county agents in 38 States reported definite work in the introduction of alfalfa. The use of alfalfa and demonstrations in methods of growing alfalfa have in the past established the fact that with care in the preparation and seeding of this crop, it is as easy to grow alfalfa in most sections of the country as any other legume. Most farmers will prefer this crop because it is a perennial, a heavy yielder, and an excellent legume feed.

During the past year the extension activities have been largely along four lines: First, the procuring of seed of known origin and adapted to the section in which it is used. This has been especially true in the New England and North Central States. Second, in Montana, Idaho, Utah, and South Dakota, the work has been very largely in assisting farmers in developing areas for alfalfa seed production of hardy strains and assisting farmers in the organization of associations for handling this crop and marketing it in a way that its identity is retained. Third, the development of sources of lime to make possible the seeding of more alfalfa acreage. This has been along the lines of developing local limestone quarries, marl beds, and so forth, establishment of lime bins where lime needs to be chipped and the procuring of cheaper freight rates to make lime more economical. A fourth line of work of especial interest has been in Michigan where they are developing the use of machinery in handling the alfalfa crop more economically.

Due to the increase in the dairy industry in the North Central, Northern, and New England States, this section has increased its acreage in alfalfa more than any other section of the country in the past few years. This has been brought about by means of intensive campaigns to interest the farmers in the production of alfalfa, information as to the proper methods of seeding alfalfa, and assisting them in getting seed of hardy varieties.

The largest acreage continues to be in the Western States. However, this area has not increased in production as fast as the North Central and New England States, since the high freight rates make it almost prohibitive to ship hay from the West to the dairy sections of the Eastern and Central States. A number of the Western States, especially Colorado, Montana, Idaho, and Utah, have been developing the production of supplementary feed crops to assist them in fattening cattle at home and in this way using most of their alfalfa hay.

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\*No attempt is made to cite all references to alfalfa in this circular. Only selected extracts showing typical methods employed and results obtained in a number of States are included. Owing to differences in terminology used in the different States and to other local conditions, the information contained in this circular should be reviewed by the State subject-matter specialist concerned before incorporating any part of it in the extension plans for the State.



## Colorado

Farmers have followed the State association rules on the registration of all crops except alfalfa. As alfalfa seed is our principal crop they went a few steps further than is required in the rules for registration. After the alfalfa has passed a rigid field inspection the association requires the grower to notify the local association of the time of cutting and stacking so that a representative of the association may be on hand to see that seed hay from the field inspection only goes into the stack. At threshing time the grower is again required to notify the association so that a representative may be present to see that seed is taken only from the stack previously noted. At this time the seed bags are sealed and counted as they come from the machine and a crimped lead seal is fastened around the neck of each bag. At the grower's convenience the seed is brought to the recleaning plant where arrangements are made with the company to thoroughly clean the machine before each lot of seed is run. Here the field seal is broken and the seed run through the cleaning machine three times. After this recleaning a representative of the association is again called and the cleaned seed is sealed in even-weight bags and stored, awaiting sale. After the bags are finally sealed, a sampler is used at two or three places in each bag to obtain a bin sample for seed laboratory analysis on each lot of seed. The seal used contains the following imprint: "Colorado Seed Growers' Association," on the one side, and, "Grand Junction, Colorado," on the other side. The alfalfa seed is put up in 50 and 150 pound bags.

The extension agent, as an ex officio member of the association, has spent considerable time acting in an advisory capacity at the meetings and as a member of the field inspection and supervision committee. This has been done as a demonstration of the way the association should operate and will not be continued after the grower-members of the organization can be trained in these duties. There are more than 14 members raising over 500 acres of registered Grimm and Cossack alfalfa. - Ben H. King, County Agent, Grand Junction, Mesa County.

## Connecticut

The lime, clover, and alfalfa campaign was started late in February after the completion of an intensive year's work on a purebred-bull campaign. The county committee of 23 members met at a local hotel with the county agent and the extension specialists and together worked on the following project:

- (1) Purpose:
  - (a) To teach the fundamental principles of crop production and soil fertility as related to clover and alfalfa.
  - (b) To meet an immediate economic need for lower feed cost and fertilizer.
- (2) Determination of problem:
  - (a) An acreage of 300 of alfalfa and 500 of clover in the county in 1924 was estimated.
  - (b) Forty thousand tons of clover or alfalfa hay would be needed to feed 18,000 head of dairy cattle in the county.
  - (c) At least 10,000 acres of clover or alfalfa is needed to feed the dairy cows in the county.





- (3) Practices to be taught:
  - (a) Value of good seed.
  - (b) Use of lime.
  - (c) Fertilization essential for clover and alfalfa.
  - (d) Inoculation of alfalfa seed.
- (4) Plans for teaching:
  - (a) Clover and alfalfa schools in communities in different sections of the county.
  - (b) Write-ups of special farms having unusual success with alfalfa in three of the leading newspapers of the county.
  - (c) Bulletin prepared by the Connecticut Agricultural College.
  - (d) Circular letters.
  - (e) Making lime available at reasonable prices.
  - (f) Finding a source of good seed.
  - (g) Field meetings.

Alfalfa schools or meetings were held in 15 communities, at which time illustrated talks were given by the county agent and specialists from the agricultural college. In these talks the value of clover and alfalfa hay to dairymen was emphasized and the principal steps to be taken to assure its profitable production was given.

These meetings were usually held in the evening. At the close of the meeting volunteers were called to give the following day to assist the county agent and specialist in reaching farmers who did not attend the meetings. The county agent and one farmer would cover one section of the town while the specialist and another farmer would cover another section.

Many soils were tested during these farm visits and the way made easy for the local person who would later solicit orders for ground limestone or seeds.

In June, three twilight meetings were held in three different sections of the county with an attendance of 25 to 50 farmers. These farmers gathered to observe the success which their neighbors were having in growing alfalfa.

A county lime pool was organized which resulted in the sale of more than 2,500 tons during the season, or approximately three times the quantity used in any previous year.

Local seedsmen were induced to stock with seeds of known origin, thus avoiding possible failures from seed of unknown origin.

The alfalfa demonstration on the farm of Anton Paulson of Woodbridge, was seeded in August, 1924, and the percentage of stand which was taken April 23, 1925 is as follows: Arizona, 0; South African, 50; Argentina, 20; Utah Common, 20; and Ontario Variegated, 100. - Raymond K. Clapp, County Agent, New Haven, New Haven County.

### Delaware

A limited number of demonstrations conducted in the county indicate the adaptability of alfalfa to local conditions and its value as a roughage for dairy cattle. Recent tests at the University of Delaware Experiment Station showed that alfalfa can be grown successfully in this county with smaller applications of lime than has been the practice to use. This condition should reduce the cost of producing alfalfa and materially increase the acreage.

The farm-business survey in the Middletown area showed that 17 per cent of the total farm expenses was for purchased dairy feed. This is due, unquestionably, to the poor quality of roughages and pastures. The survey indicated that some of the better paying farms are raising alfalfa and appreciably reducing the amount of purchased dairy feed. The following illustration is given:



	Better paying farms:	Poorer paying farms
Cows.....	28	18
Tons of alfalfa hay.....	20	0
Average milk production per cow.....	4,907	3,000
Percentage of milk receipts paid out for dairy feed.....	20	56.6
Labor income.....	\$1,576	\$479

Purpose of project:

To demonstrate the essential cultural practice in the production of alfalfa.

Goal:

To obtain cooperators for four demonstrations.

Methods:

- (1) Number of demonstrations - cooperators for five demonstrations were obtained.
- (2) Type of soil-plots having well-drained, Chester loam, or Sassafras loam soil were selected for the demonstrations.
- (3) Lime tests - the department of agronomy at the university made determinations of the lime requirements for the demonstrations.
- (4) Seed bed - the seed beds were prepared similar to the methods used in preparing a seed bed for corn.
- (5) Type of seed - common, hardy, northwestern seed was used.
- (6) Inoculating seed - the county agent inoculated the seed through the use of the soil method.

Publicity:

In August a farm tour was held, during which one of the better alfalfa demonstrations was inspected. Prof. G. L. Schuster, of the University of Delaware, who was present on this tour, discussed problems of alfalfa production. During farm-business tour held in October, the county agent, with the use of charts, showed how some farmers had measurably reduced the cost of milk production by supplementing the concentrated feeds with alfalfa hay. The county agent's monthly reports, showing the progress of the demonstrations during the year, have been published in the county papers.

Results:

The season has been very unfavorable for alfalfa. However, the demonstrations are in good condition and with average winter weather they should be in a good state of production next year. - R. O. Bausman, County Agent, Newark, New Castle County.

Idaho

In the alfalfa seed certification project all fields are carefully inspected according to international crop-improvement standards. All seed is sealed at the machine and checked through every cleaning process and then tagged and sealed.



In order that the grower may have his field certified, it is necessary that he plant State certified seed and the seed must have been planted on clean land, either following two years of cultivated crops or on virgin soil. During the summer or fall the seed is planted, a seedling inspection is made to determine freedom from any old common alfalfa plants. During the blooming season the fields are inspected to ascertain the degree of variegation in the blossoms and other Grimm characteristics.

At the time of this inspection the grower is acquainted with the weeds detrimental to the production of high-quality seed and is instructed in the best cultural practices to follow. A fee of \$2 is charged for seed field inspection. A map of the entire alfalfa acreage is prepared by the grower and filed in the commissioner's office. Having complied with all the requirements, the department issues the grower a field inspection certificate which vouches for the genuineness of the seed fields.

All seed eligible to certification is sealed at the machine by authorized deputies of the seed commissioner's office. One copy of the hulling report is sent to the office and one copy accompanies the seed to the cleaning plant. The seed is weighed, the seals broken, and after recleaning the total No. 1, No. 2, and screenings are weighed to check with the total seed dumped. The bags are resealed and forwarded to the local marketing associations or the seed is sold to dealers who cooperated with the department in the certification work.

A special seal bearing the impression of the outline of the State of Idaho is used on all bags containing genuine Idaho Grimm.

We have adopted a tagging system which serves to identify grades of Idaho alfalfa seed. The No. 8 blue tag indicates extra No. 1 seed, purity 99.50 per cent, plump seed, free from dodder and sweet clover; the red tag indicates No. 1 seed, purity 99 per cent, plump and free from dodder, and may contain 90 sweet-clover seeds per pound; and the yellow tag indicates the variety of seed but does not imply purity.

The Grimm and Cossack alfalfa seed association of Idaho and seed dealers who market Idaho pedigreed seed are responsible to the State seed commissioners for the quality designated by the certification tag attached. In 1925, 20 counties had 609 growers whose fields, comprising 9,177 acres, were eligible for certification.

This year's checking enabled the department to eliminate the acreage grown from seed misrepresented as Idaho Grimm. Idaho Grimm marketed under blue, red, or yellow State tags is genuine. Any seed marketed as Idaho Grimm without the State tag and seal is termed by the pedigreed seed growers of the State, "moonshine Grimm."

At present we have three local Grimm growers' associations in the State, namely; Idaho Grimm Alfalfa Seed Growers' Association, Salmon River Tract Grimm Association, and the Oneida County Grimm Alfalfa Seed Growers' Association. - C. B. Ahlson, Extension Agronomist, Extension Division of the University of Idaho, Boise.

The soils project and the alfalfa project are closely allied. At the Sandpoint Experiment Station the following specific methods have been found most effective in starting alfalfa and in producing satisfactory yields:



- (1) Plow land in fall.
- (2) Apply 200 pounds of gypsum per acre in the fall, so that a greater benefit will be derived the first year.
- (3) Broadcast inoculated Grimm alfalfa seed.
- (4) Roll the field with a log roller or cultipacker after seeding to compact the soil which is usually too loose and fluffy.

A publicity campaign to encourage alfalfa planting was carried out through newspapers, circular letters, personal letters, method demonstrations, farm visits, and a field day. - Walter F. Thomas, County Agent, Sandpoint, Bonner County.

The production of Grimm alfalfa seed on dry lands in this county has passed the demonstration stage, so far as the possibilities of growing the crop is concerned.

The introduction of this crop into the system of dry-land farming is solving, to a great extent, the marketing, transportation, and crop problems.

With loamy soil and plenty of water, Grimm alfalfa seed has matured three years in succession under varied weather conditions.

Grimm alfalfa seed should be sown on clean, well-fallowed land; should be planted in the spring as soon as the soil is ready to work; and should be sown deeper than 3/4 inch. However, the depth of seeding depends upon the moisture content of the soil.

The seed is sown with a grain drill, spaced in rows 24 inches apart, and seeded at the rate of 2½ pounds per acre. It has been demonstrated that nurse crops, such as wheat or barley, should not be planted with alfalfa seed on dry land.

Cultivation of the Grimm alfalfa fields should begin as early in the spring as soil conditions will permit, working the surface of the ground vigorously with a spring-tooth harrow. The disk harrow should never be used on seed plots because it cuts off the tender shoots and prevents the plants from stooling, which materially reduces the amount of seed. The first crop of alfalfa is either clipped or pastured. Greater yields have been produced when the crop has been clipped than when pastured. The disadvantage in pasturing on dry land is that the soil is packed so tight by tramping that the moisture is lost, and moisture is the determining factor in dry-land seed production. Clipping is done when the first crop reached the height of 8 or 10 inches. If the first crop of alfalfa is not clipped or pastured it produces a rank succulent growth at the sacrifice of seed production. Warm weather and a nominal amount of moisture insure a slow, steady growth which produces the most profuse blooming and tripping of the blossom, which ultimately results in greater seed formation and acre yields.

Such a system as described above practically insures a seed crop under dry-land conditions. Clipping in June sets the crop back of the last frost in the spring and insures sufficient time for development of the seed before early frosts in the fall. - Raymond J. Smith, County Agent, Malad, Oneida County.

## Illinois

Our alfalfa club was organized in 1924. There were 56 boys who received 5 tons of limestone each to be used for a 1-acre plot of alfalfa. Approximately two-thirds of these boys raised alfalfa during 1925. At Butler we have a local alfalfa club with 20 members, 14 of whom were successful in raising a crop of





alfalfa during 1925. In checking up the date of seeding alfalfa with the club boys over the county, it was brought out that the best time to seed alfalfa during 1924 was the last of July or the first of August. The boys who seeded their alfalfa after the middle of August either got poor stands or else they lost their entire stand by winterkilling. The organization of our alfalfa club resulted in a few fathers of the alfalfa club members learning how to grow alfalfa successfully on their own farms. The Butler alfalfa club received their club charter and their achievement charter. This club held regular meetings, according to the State rules, and had a team which demonstrated at Hillsboro and Litchfield community fairs. Another alfalfa club was organized in the Hickory Grove community with nine members. We feel that the alfalfa club has been one of the most successful club projects ever undertaken. - Alden Snyder, County Agent, Hillsboro, Montgomery County.

## Iowa

As a result of the legume education and agitation work in Black Hawk County, 2,000 acres of alfalfa were seeded. Many farmers have pinned their entire hope of a prosperous agriculture on the increase of legumes in their farm operations. The growing of legumes is necessary to maintain the soil fertility and to obtain protein feed to supplement our heavy corn rations. We must grow our proteins instead of buying them.

It is accurately estimated that 10 acres of alfalfa on every farm in this county will increase the feeding value of our farms by \$1,000,000. In connection with corn it is the most valuable crop to be grown. It furnishes a protein feed that is necessary to balance a corn ration. It keeps our money at home. As one banker of the county put it: "For a long time I have thought that we had to change our farming and grow something different. I believe alfalfa is the crop which is going to save the farmers of this county." It is impossible to farm profitably over a period of years without growing alfalfa and sweet clover. The legume work should be pushed until timothy is out of our rotation and alfalfa is growing on every farm in the county.

From this year's experience it appears that the farm tour is most effective in spreading the alfalfa and legume idea.

On the alfalfa tour conducted in this county, 60 farmers learned the "gospel" of alfalfa and lime. The tour was a big success. - J. L. Uban, County Agent, Cedar Falls, Black Hawk County.

Eighteen hundred and sixty tons of limestone have been shipped into Chickasaw County and applied to the soil; probably 500 tons in addition have been crushed and sold to farmers by local quarries; a crusher and grinder has been installed in the county where farmers can get the lime at any time they wish it; and about 250 acres of alfalfa have been seeded, with a prospect that nearly that much more will be seeded in the spring.

The limestone and legume project was emphasized because all evidence showed: That at least 90 per cent of the soils was sour, and in need of lime; that the percentage of farm land in legumes was very low; that many farms have become almost worthless due to continual cropping to grain; that the county is rapidly becoming a dairy center and there is a lack of leguminous feeds, necessitating the buying of high-priced supplemental feeds; and that the farmers in the county are of the opinion that clovers and alfalfa can not be grown here.



Much of the organization work in getting this project started was done during the fall of 1924. In October and November a number of soil-testing demonstrations were conducted in nearly all parts of the county. H. W. Warner, Soils Specialist, was with us several days and conducted six meetings, and the county agent tried as nearly as possible to cover the remainder of the county. These meetings and demonstrations were the opening wedge in the campaign, as a number of carloads of lime were pooled by those in attendance.

During the winter and spring the county agent furnished the local newspapers with articles which urged the farmers to use lime and to sow alfalfa and sweet clover.

In February we had a series of legume meetings in connection with our dairy feeding and management schools. M. A. Hauser, farm crops specialist, was present at these meetings. Mr. Hauser discussed the relationship of alfalfa and sweet clover to economical dairy production, and the use of lime in growing these crops successfully.

On September 9, a meeting was held on the H. C. Stabenow farm to show soil tests for lime requirements, the effects of the use of lime, and improved methods of spreading lime. Mr. Stabenow was interested in this project and asked for the meeting to be held on his farm. The meeting was advertised by notices sent out from the farm bureau office, and telephone messages sent out by Mr. Stabenow. The farmers went to the field where Mr. Stabenow had sown alfalfa on both limed and unlimed soils. Where lime had been used there was a perfect stand of healthy alfalfa; where no lime had been used there was practically no alfalfa.

Much emphasis was placed on the alfalfa tour conducted on July 29, 1925. The idea was to get as many people as possible to visit farms where lime had been used and where alfalfa and sweet clover are being grown with more or less success. To this end arrangements were made with farmers whose fields met these requirements.

Another successful phase of the project was a limestone and legume booth exhibited at the Big Four fair at Washua. This booth consisted of the following: Pictures which showed the results of the use of lime for alfalfa and sweet clover; samples of sweet clover and alfalfa; samples of limestone from different quarries; and a series of charts which showed the loss of fertility owing to continuous cropping, and how this fertility can be maintained by the use of proper fertilizers and leguminous crops. - Frank Hunt, County Agent, New Hampton, Chickasaw County

In 1925, 25 carloads of lime, averaging 50 tons to the car, and 3 tons of alfalfa and sweet clover were ordered through this office. The lime was distributed among six or eight farmers who will use it to start small acreages of alfalfa. Five times as much lime was used in the county in 1925 as was used in 1924.

Probably the most striking demonstration was the result of an application, by Mrs. Anne Youtsey, to have 25 acres of alfalfa seeded under the instruction and supervision of the county agent. It was necessary to use 60 tons of lime to correct the acidity of the soil, but at present Mrs. Youtsey has a 25-acre perfect stand of alfalfa. Mrs. Youtsey had an 80-acre farm which was badly run down and was renting for \$300 per year. Late in the fall when the alfalfa was rank and strong and the stand was assured, Mrs. Youtsey was offered \$600 rent per year for the farm. "I could attribute this increase in rent to nothing but the alfalfa," said Mrs. Youtsey. - W. J. Morris, County Agent, Chariton, Lucas County.



As a result of six haymaking demonstrations conducted by the farm bureau in cooperation with J. L. Adams of the Dain Manufacturing Co., 103 Wapello County farmers learned how to make hay under almost all conditions of weather and in such a way as to retain the original color of the hay and to save the leaves.

According to this system of haymaking, the hay should be put in windrows, immediately after it is cut, by a side-delivery rake following in the same direction as the mower. This puts the hay in the windrow with most of the leaves turned under where the sun will not burn them, and permits the moisture in the stems to pass through the leaves with the result that the leaves are kept tough and very few are lost. Another advantage in following the mower with the side-delivery rake is that in case of rain the windrows can be turned back onto dry ground shortly after the sun comes out. If the hay was lying in the swath it would be beaten down into the stubble and by the time it was dry underneath the hay on top would be burned and the leaves would fall. By having the hay in the windrow, the upper two-thirds to one-half is dry by the time the ground beside the windrow is dry. By turning the windrow over, you place dry hay on dry ground in a loose condition so the air circulates between the ground and the hay, thereby keeping the moisture from condensing up into the hay from the ground. Mr. Adams has put alfalfa hay into the barn six hours after it has been cut.

This project was taken up because the first crop of alfalfa comes at a time when we have considerable rainfall and it is hard to cure the hay under the old method of handling it.

It is my opinion that every county agent in the State can well afford to conduct haymaking demonstrations similar to those described above, for it is just as necessary to teach the farmers how to handle a crop after they have grown it as it is to teach them how to grow it. - Glenn Hazen, County Agent, Ottumwa, Wapello County.

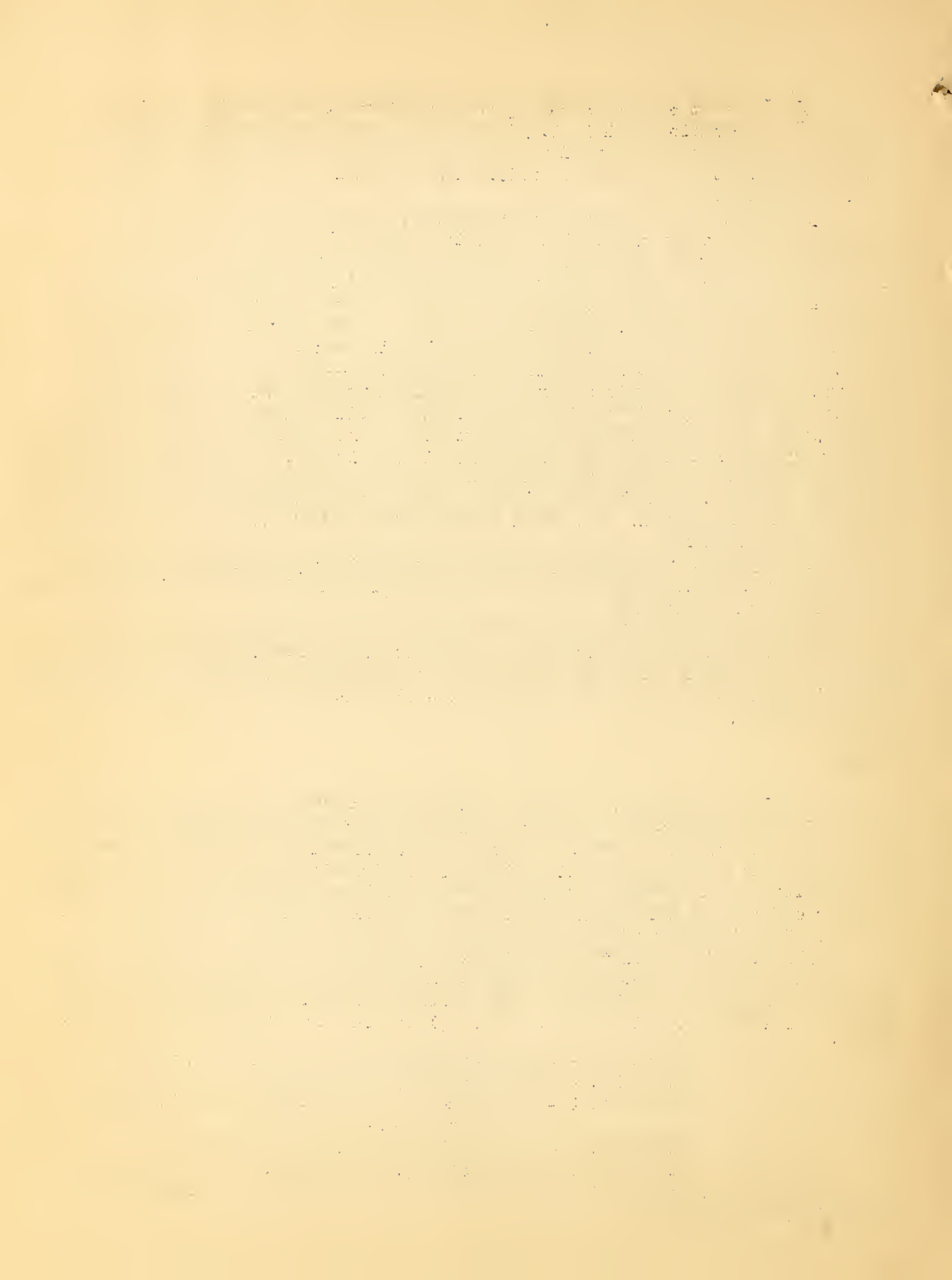
## Kansas

Alfalfa is recognized as one of the most desirable crops which can be raised in Greenwood County. However, the acreage increases slowly as old stands die out. Acid soil has caused a part of the alfalfa loss but the main cause now appears to be bacterial wilt. This was definitely determined by J. L. Wiemer, pathologist of the Kansas State Agricultural College, on October 29 on the farm of George Forbes of Eureka, and other cases of wilt are known to exist in the county. The discovery of the disease was announced in the county papers.

The alfalfa fertility demonstration plots on the farm of George Forbes have been continued. Good stands have been maintained except on plot No. 2 where a ditch developed, so in 1924 and 1925, yields were taken on the north side of plot No. 1 instead of plot No. 2. These plots are given the following treatments:

- Plot No. 1 - 150 pounds of acid phosphate, annually.
- Plot No. 2 - No treatment, check plot.
- Plot No. 3 - 150 pounds of acid phosphate and 10 tons barnyard manure, annually.
- Plot No. 4 - 10 tons barnyard manure, annually.
- Plot No. 5 - No treatment, check plot.

The results of the alfalfa fertility tests conducted by George Forbes, in 1925, are as follows:



Plot number	: First cutting: : in pounds	: Second cutting: : in pounds	: Third cutting: : in pounds	: Total yield : in pounds
1.....	: 1,500	: 1,763	: 1,160	: 4,423
2.....	: 1,200	: 1,500	: 951	: 3,651
3.....	: 1,833	: 1,350	: 1,322	: 5,110
4.....	: 1,800	: 1,875	: 1,160	: 4,835
5.....	: 1,275	: 1,230	: 951	: 3,456

- J. W. Farmer, County Agent, Eureka, Greenwood County.

During the last few years the production of alfalfa has been limited to naturally adapted soils - soils free from acidity. It was thus confined mostly to the better types of soils, bottom fields, and a few upland fields which farmers have found by the trial and error method to be free from acidity. It was the common opinion that a soil had to be just right before it would grow the crop. This prevented alfalfa from being grown at all on many of the good farms of the county and on the better fields. The fact that they could not raise alfalfa, one of the best dairy feeds, had discouraged many farmers from keeping more milk cows.

No definite goal was set as to the number of acres to be sown to alfalfa in 1925, but it was planned to get some alfalfa started in every community in the county on fields which had failed to produce a successful crop. In seven lime and legume meetings held in the early winter, the use of lime, acid phosphate, and manure for the successful production of alfalfa was discussed by E. B. Wells and L. E. Willoughby, crops and soils specialists.

During the summer the demonstration fields sown in 1924 were visited on the tours held on June 16 and August 18. At these places it was definitely shown that alfalfa could be produced on upland fields where it had failed before, and the use of barnyard manure and acid phosphate were also demonstrated.

In the fall of 1924, A. L. Lingle of Richland township limed his 4-acre demonstration plot at the rate of 2,000 pounds per acre. During 1925, Mr. Lingle cut 18 tons of good quality alfalfa hay from the plot. This demonstration was in a community, where, because of soil acidity, alfalfa has been markedly unsuccessful. As a direct result of this demonstration and the publicity given it, 200 tons of lime were shipped into this community.

J. W. Barker of Louisburg has 28 acres of Grimm alfalfa on his farm, 8 acres of which is 3 years old and the remainder 2 years old. In 1925, Mr. Parker produced 40 bushels of Grimm seed. - J. D. Buckman, County Agent, Paola, Miami County.

### Louisiana

In order to produce a good legume hay for his dairy cows, I induced one hill farmer to grow alfalfa. Forty tons of lime and a good coat of barnyard manure were applied to 18 acres, after which the alfalfa seed was inoculated and planted. By occasional diskings, the land had been kept free from vegetation for several months previous to planting.

The seed came up to a perfect stand and when in the field just before the first cutting, I found that every plant examined showed nodules which indicated that inoculation was successful. Two cuttings, averaging 1 ton per acre, were obtained before the severe dry weather stopped further yields. Since the fall rains, the alfalfa has revived and I expect to see it yield much better next year.





Two demonstrations, one 35-acre and one 25-acre, located on rich river soil yielded 6 tons and 5 tons alfalfa hay per acre respectively. A number of fields situated on old, thin soil suffered more from the drought and did not average more than 2 tons per acre. - J. B. Anthony, County Agent, Shreveport, Caldo County.

Maine

The purpose of the alfalfa project is to demonstrate that alfalfa can be successfully grown in Kennebec County when proper cultural methods are followed.

Two alfalfa plots started by former county agent Deering are still giving good results, and several other plots started between 1920 and 1924 are doing well. However, there are many farmers who still believe that alfalfa can not be successfully grown here.

Experience has shown that alfalfa will be as successful as any other crop when the following requirements are met:

- (1) Plant only on well-drained land where ice will not lie in winter.
- (2) Use only the Grimm or an equally hardy variety.
- (3) Inoculate the seed before planting.
- (4) Cut the second crop early enough to permit the alfalfa to make sufficient growth to protect itself through the winter.
- (5) Time.
- (6) Plant on rich sandy or gravelly loam with fairly open subsoil.

Demonstrators have been selected either by personal calls or at planning meetings. Men who would agree to follow directions have been chosen, and type-written instructions have been given them. In order to make sure that the proper seed was used, the county agent obtained it for the demonstrators. In every instance Idaho grown certified seed has been used.

This is the first year that alfalfa demonstrations have been included in the county program, although tests have been conducted since 1914.

Dana Wilkins of Windsor has an alfalfa plot from which he has cut 24 consecutive crops - two crops every season since 1915 and twice he cut a third crop. In 1925 the plot had the largest yield of any of the old stands.

M. F. Williard of Monmouth has a demonstration of alfalfa and of grass, side by side, which were seeded at the same time and treated alike. The yield per acre in tons during the last two years has been as follows:

Year	Alfalfa		Grass	
	First crop	Second crop	Limed	Unlimed
1924 .....	2.46	1.04	1.85	1.69
1925 .....	2.72	1.54	1.62	1.18

The average yield of the alfalfa plots for the past four years has been as follows:

Year	Yield per acre
	Tons
1922.....	3.20
1923.....	2.94
1924.....	2.70
1925.....	3.11



This year 19 new alfalfa demonstrations were started, 11 of which had a nurse crop. There was very little difference between the two methods of planting, although where a nurse crop was used the weed crop was large. In most of the demonstrations the alfalfa stand was good. Clarence A. Day, County Agent, Augusta, Hennebec County.

### Maryland

Without a field of alfalfa it is hard for a dairyman in this section to make money. As a result, nearly every farm on which a dairy is maintained attempts to produce alfalfa hay. With the exception of the limestone ridges and a few of the heavier, deeper, and most fertile bottom-land soils, very little of the cropping soil of this county is adaptable to alfalfa growing. For this reason one of the greatest problems with this crop is to know when and where to encourage its production and when and where to discourage. The factors limiting its growth are soil acidity, poor drainage, shallow depth soil, lack of phosphate, and deficiency in soil fertility. Most often failure to produce this crop is because of one or a combination of these factors.

Six demonstrations were conducted to ascertain the limiting factors on the particular farms and sections where the demonstrations were located. One-fourth acre and 1/2-acre plots were measured and staked off on the poorest part of the field which the dairyman had selected as his alfalfa field. The demonstration acreage was then divided into four parts and a Truog soil test for acidity was made. On the first of the four plots pulverized lime was applied in the amount determined by the test. Manure was applied on this first plot at the rate of 8 tons per acre and 16 per cent acid phosphate at the rate of 160 pounds per acre. The second plot had the same treatment as the first except that the manure was left out. The third plot received the same treatment as the second except that the phosphate was omitted. The fourth plot received nothing but the seed. The demonstrations were quite conclusive in showing the importance of lime, manure, and phosphate.

Improved seed of American origin was planted on 22 farms in the county on our recommendation. In 1925 nine farmers in the county inoculated alfalfa seed for the first time.- R. F. McHenry, County Agent, Cumberland, Allegany County.

### Massachusetts

In 1924, a number of farmers were induced to cut their feed bills by growing more alfalfa and clover, and in 1925 it was planned to bring the need of these crops to more farmers. The project was forwarded by locating demonstrations in sections where very little alfalfa had been started and by following these demonstrations through the season to insure their success. Meetings were held in the following towns: Tyringham, Hancock, Monterey, Savoy, Sheffield, and Richmond.

Later in the year a circular letter was sent to farmers in one-half of the towns, asking them if they were interested in alfalfa, growing and telling them we would be glad to test their soils and give directions for planting the crop. Replies were followed by field work in testing the soil. At the time of these tests the farmers were informed as to the source of lime and were given instructions regarding alfalfa production. Later a bulletin on alfalfa planting was sent to each farmer.

In June, a twilight meeting was held in Sheffield, our best alfalfa town, where from 12 to 15 farmers gathered to see successful demonstrations.



In 1925 we induced 18 additional men to plant alfalfa as demonstrations. One man planted 22 acres. As a result of the alfalfa and clover campaign, 629 tons of lime were used in 1925 as against 123 tons in 1924. - L. A. Bevan, County Agent, Pittsfield, Berkshire County.

Last year the soiltext tester to determine lime requirements was used on dairy farms in practically all parts of the county. These tests showed the soil to be strongly acid, and the fact that clover on these farms did not yield as good crops as it should corroborated these facts. At dairy farmers' schools these facts were presented. It was pointed out that with such acid soil it is practically impossible to get good clover crops two consecutive years, regardless of the fertilizer used. Local leaders were equipped with soiltext outfits and a campaign was started to get more farmers to use lime.

As a part of this project, a campaign was conducted to get dairy farmers to grow more and better roughage. Special emphasis was placed on alfalfa and clover. As a result of this work, 43 men enrolled in a campaign to produce at least 18 pounds of hay and 35 pounds of silage for every cow they kept. Fifty men started 149 acres of alfalfa which will be used as demonstrations in 1926. In this work we tried to get every farmer to plant his alfalfa right, as we already have too many farmers who have demonstrated how to fail with this crop. We have been fortunate in getting some farmers not to try to grow alfalfa because they failed to make conditions right for this crop. Census figures show that there were only 10 acres of alfalfa in this county in 1907. This acreage increased to 92 in 1919. Since that time the acreage has increased till we have 356 acres to be harvested in 1926.

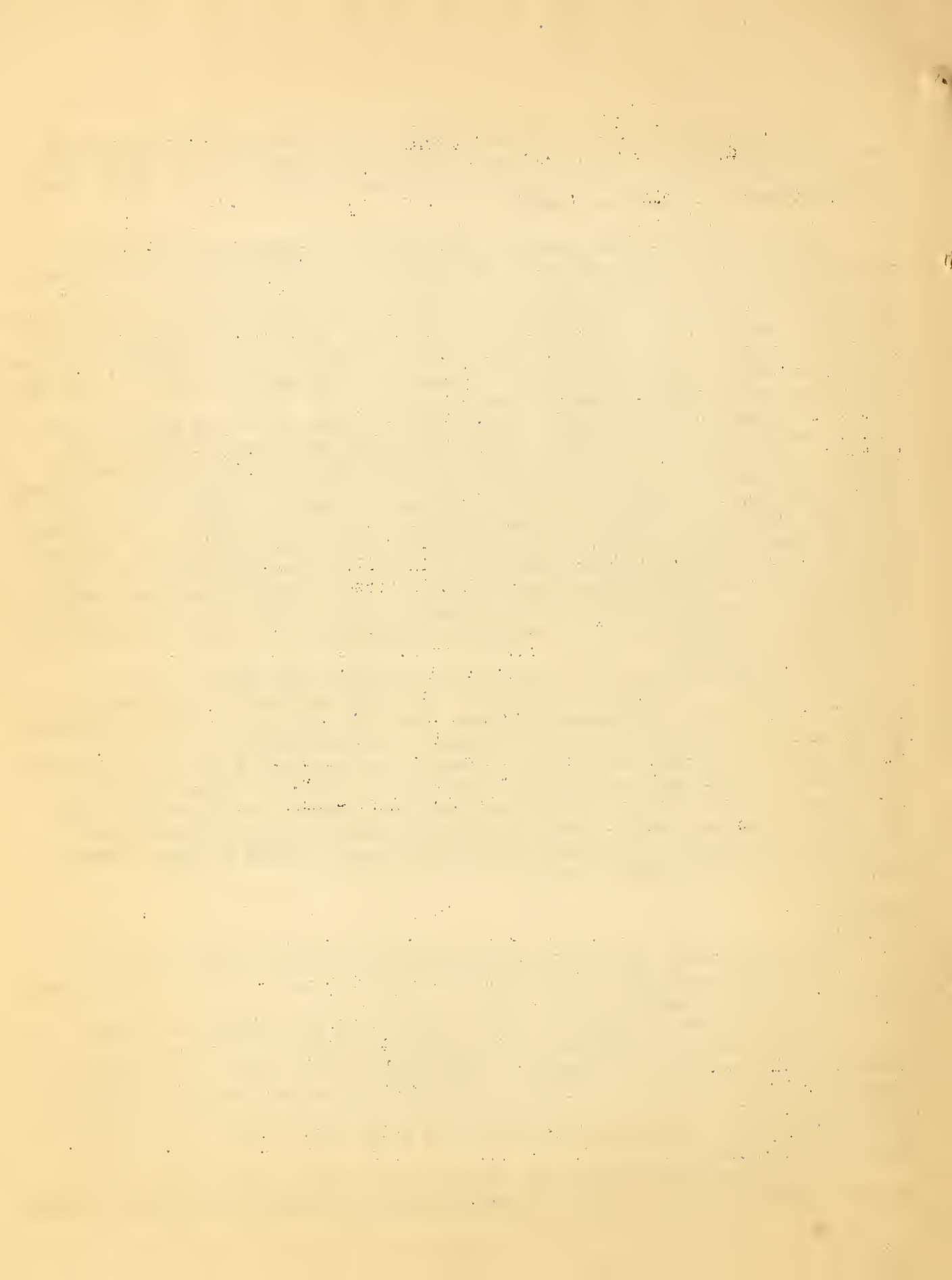
Some farmers objected to losing the use of the land for one year in starting alfalfa. The following method of starting the crop was used successfully in three out of four demonstrations: The land was manured and plowed early in the spring; 3 tons of lime and 500 pounds of acid phosphate per acre were disked into the ground; the land was worked once a week with a spike-tooth harrow till about June 15; corn was planted as usual; the land was leveled with the spike-tooth harrow, and the alfalfa seed was sown, brushed in and rolled. The one failure from this method resulted where the weeds were not killed before planting. Too much corn was used on this plot also. - Roland A. Payne, County Agent, Northampton, Hampshire County.

### Michigan

Extension effort in alfalfa growing in 1925 produced a large field of timely and popular projects. Interest in this legume has grown to such an extent that the demand for help is hard to meet.

A very unfavorable year for commonly grown hay has stimulated unusual interest in alfalfa. The shortage of hay brought forcibly to the farmer's attention his acute need of this crop. These conditions created a widespread demand from all sections of the State for information on the essential factors in alfalfa culture and have added importance to the continuation of the alfalfa drive begun by the farm-crops department five years ago. Three lines of procedure were followed:

(1) Dairy-alfalfa campaigns: These campaigns not only create a desire to grow alfalfa but also furnish specific information relative to alfalfa growing.



(2) Marl excavating: These important demonstrations are opening up a field almost untouched. The excavating of marl is arousing much new interest in alfalfa in many sections of the State.

(3) Haymaking demonstrations: Many farmers are now harvesting a large acreage of alfalfa and face the problem of handling such a crop two or three times a year.

The labor cost of curing alfalfa with commonly practiced methods is high and the farmers with large acreages are seeking cheaper methods. The markets are having trouble to procure the quality hay which is desired by discriminating buyers.

Statistics for Michigan show that a little over 500,000 acres of alfalfa were cut for hay in 1925. This acreage is increasing from 50,000 to 75,000 acres each year. Adjoining States show 125 to 150 per cent increase in alfalfa acreage and Michigan shows nearly 700 per cent increase.

As nearly all this increase took place since the alfalfa campaigns, it is not unfair to assume that these campaigns have been a big factor in the rapid increase in acreage.

Since 1921, dairy-alfalfa campaigns have been conducted in 56 counties in the State, 12 of which had campaigns in 1925. Five of these counties had already had campaigns one to four years previous.

With five counties having had two campaigns and eight or nine counties waiting for the second campaign in 1926, it is readily seen that this phase of alfalfa work is still an important one. In covering a county with a second campaign it was found that a very small percentage of those in attendance had attended the first series of meetings. The informal character of the barn and field meetings, with an average attendance of 8 to 12, furnishes better opportunity for freedom of discussion than did the old institute-type of meetings.

In a few counties extra stimulus has been given these campaigns by offering prizes for the largest attendance at the meetings. The prizes were donated by banks and other local institutions interested in the development of the community. As a result of these prizes there was greater interest and attendance at the meetings.

To insure successful production of alfalfa on a large majority of the farms of the State, the soil must be sweetened. The cost of adding lime to such soils has kept a number of farmers from raising this legume.

Michigan is fortunate in having large deposits of marl distributed over a wide area of the agricultural lands. The opening of these deposits will have a marked influence on many farms where the expense of liming has been a factor in alfalfa production.

The marl must be excavated and placed in piles in order that it may be accessible to a community. As most of the marl beds are in lakes or swamps, or other inaccessible places the problem of excavation is an acute one.

Marl "mining" demonstrations were conducted by L. F. Livingston, extension agricultural engineer. At each of 31 such demonstrations, 240 yards were dug, making available enough marl for 60 acres of alfalfa in each community. The farm-crops department cooperated with Mr. Livingston in these marl digging campaigns by leading discussions on the most desirable cultural practices of alfalfa and sweet clover. Soil testing for acidity and the common methods of distributing marl were shown.

By the use of properly constructed left-hand side-delivery rakes immediately after cutting, it is possible to handle alfalfa so as to place the leaves on the inside of a loose, fluffy windrow. Hay cured in this manner can be handled with a loader with little loss of leaves. The labor cost can be reduced 40 per





cent, as compared with the common practice of cocking and hand-loading, and hay of good quality and color, in keeping with food and market demands, will result.

The farm-crops department recognized the need of better haymaking methods, especially for alfalfa. In cooperation with three of the largest companies handling hay tools in the State, haymaking demonstrations were conducted in 12 counties in 1925.

At these demonstrations, the alfalfa was cut, raked green, and the windrows given a half-turn when the top was cured. By the next afternoon, weather conditions permitting, the hay was ready to be put in the barn. By this method the hay retains practically all its leaves and has that green color which brings the highest grade on the market. These "hay days" were attended by 1,775 farmers who saw the entire process of haymaking.

The crops specialist conducted 511 meetings in connection with soil excavating, haymaking, and dairy-alfalfa campaigns. A total of 8,490 people attended these meetings. This widespread interest in alfalfa is such that more effort will need to be expended on the project in 1926. - L. D. Kurtz, Farm Crops Specialist, Michigan Agricultural College, East Lansing.

### Minnesota

Because of the importance of dairying and because dairy improvement is founded upon better feeds and feeding methods, alfalfa has been given major attention. As the soil and climate of this county is favorable to alfalfa, it can easily replace clovers and supply the farmers with a home-grown, high-protein feed. A great deal of the soil of this county is a very heavy type, and consequently, is benefited by alfalfa raising. At this time alfalfa is being grown in every community in the county and in some cases, under adverse conditions, is doing well.

The program of work on alfalfa introduction called for an increase of 1,200 acres. The results show that 60 cooperators seeded 847 acres in 1925. A very conservative estimate gives this county a total of 2,500 acres of alfalfa.

The farm bureau purchased 1,200 pounds of alfalfa seed and sold it to the cooperators at cost. When this supply was exhausted orders were placed through the Hennepin County Farm Bureau. Only first quality seed which was certified was procured.

Alfalfa inoculation was obtained through the United States Department of Agriculture. The cooperators were given an application card which entitled them to sufficient inoculation for 1 bushel of seed. Commercial inoculation was carried by the farm bureau and sold to the farmers at cost.

In an effort to bring the importance of alfalfa before the farmers, special newspaper articles were written and special alfalfa meetings were held. During the alfalfa meetings lantern slides were shown. The cooperation of the newspapers was solicited and they were induced to run weekly "alfalfa clubs," under which appeared the names of men who were planning to seed alfalfa and the acreage to be grown by each. - R. J. Ribelhausen, County Agent, Boudette, Lake of the Woods County.

Years ago Pennington County produced vast crops of wheat. At that time this section was known as the "bread basket" of the great Northwest. This title changed long ago and a new beginning has been made by the coming of vast fields of alfalfa. Following the years of greatest wheat production, this crop became smaller and smaller until, about 10 years ago, the grain fields were replaced by another crop far less valuable, the perennial sow thistle.



The extension workers from the university farm and the local county agent formulated plans for an alfalfa and sweet-clover campaign. A local editor awarded alfalfa and sweet-clover seed with a subscription to his paper for the same price that his paper had been selling for the year previous. Following this campaign many small acreages of alfalfa and sweet clover were planted which attracted county-wide attention and resulted in the extensive planting of both crops. At present there are approximately 7,300 acres of alfalfa and 8,000 acres of sweet clover in the county.

It was observed that alfalfa has been grown for 20 years, without replanting, on a field on the Peter Engelstadt farm near Thief River Falls. This led to the belief that alfalfa was the salvation for the farmers of the Northwest.

In 1923 the county agent with the assistance of the commercial club and the bankers' association procured a carload of Grimm alfalfa seed which was sold to the farmers of the valley. This seed greatly increased the already large alfalfa acreage of the county. The following year the bankers' association distributed another carload of seed, and at the present time there are few farmers without this thriving crop. The soil of the county is naturally adapted to alfalfa growing.

The growers and boosters of a greater alfalfa acreage became so enthusiastic that they arranged for an alfalfa day to be held in Thief River Falls on December 11. Arrangements for alfalfa day were carefully made by several committees, each of which served an important place on the day's program. A large alfalfa palace, built of alfalfa-hay bales in the form of an arch, was erected and illuminated with myriads of colored lights. This celebration attracted such interest that The American Magazine sent a special representative to the county with the result that several pages of the magazine were devoted to a write-up of Peter Engelstadt's success of farming in the Red River Valley.

The official program given throughout the day and evening was but an incidental feature. The main object was the celebration of a new era to this community, which is determined to place alfalfa on every farm to feed the rapidly increasing number of dairy cows of the Red River Valley. -- J. J. McCann, County Agent, Thief River Falls, Pennington County.

### Missouri

During the past three years alfalfa has attracted most attention in our legume program, and the interest this year has been the greatest of all three years. This interest has been due to two or three factors, the greatest of which is the success our growers have attained in the production of this crop. It is an established fact that alfalfa will grow profitably on every farm in the county if the practices necessary to alfalfa production are followed.

Each year a tour of the alfalfa fields is made. It has been our custom to select a central meeting place and go from there to all the fields we can to observe the results from different methods of handling the crop. Our farmers have become experts in diagnosing the difficulties which have been met, and alfalfa production from now on is just a matter of following the established practices. Lime for acidity, seed inoculation, good seed, a good seed bed, and seeding before August 25, insure results. Our best fields are producing 5 tons of hay per acre each year from four cuttings and supplying a large amount of the needed roughage on these farms.



This year extra interest was added to the tour, as cash prizes amounting to \$50, were offered to the renter or owner, of 30 acres or more, who produced the best 5 acres of alfalfa. In this contest Harold Lueders won first prize; Martin Rea, second; and J. C. Walker, third. In addition to these prizes the two banks of Lathrop offered a carload of lime to the school district which used the greatest amount of lime during 1925. Dale district won, having used 50 tons. Prairie Dell and Bonham districts used 42 tons each; Hafful district 40 tons; Lathrop district 34 tons; and Brockings district 13 tons. - Rose Nichols, County Agent, Plattsburg, Clinton County.

## Montana

The problem in alfalfa-seed production has not been one of getting growers but one of limiting growers to those who are dependable. Although alfalfa seed has been grown here for several years, the methods of planting, cultivating, and harvesting are not standardized.

Registered alfalfa-seed growers over the entire county, acting on the advice of the secretary of the Montana Seed Growers' Association, have conducted experiments with the idea of improving methods and increasing yields of high-quality seed.

As the seed industry exists at present, it looks questionable if registered alfalfa seed can be grown successfully under irrigation due to the presence of sweet clover. Under dry-land conditions the seeding with a corn planter at the rate of a pound of seed to the acre the last of May seems to be the best practice. Pasturing back or clipping up to June 1 gave best yields this season. Seeding on corn ground or sod gave good results. Broadcasting with a nurse crop on dry land has not been successful.

The registered seed grower of the future will probably be the most successful if only high-quality seed is used. If this seed is put on corn ground at the rate of three-fourths to one pound of seed to the acre, sufficient cultivations should be given to conserve moisture and prevent weed growth. Clipping back or pasturing will doubtless yield a greater quantity of seed than if permitted to grow without retarding the growth. - P. H. Lewis, County Agent, Miles City, Custer County.

The growing of pedigreed alfalfa seed has proved a practical undertaking. The price received for pedigreed seed is twice as much as that received for common. The acreage of alfalfa has increased from a few to more than 1,000.

Demonstrations of growing alfalfa in rows for seed production have proved that in favorable seasons good yields of seed may be obtained. In 1925, between 85 and 90 acres were seeded and cultivated. One field of Cossack seeded in April produced over 60 pounds of seed per acre the first year, giving a larger income than wheat on the same farm. Stockmen and farmers far from town find alfalfa to be their best cash crop as it is easy to market. Phillips County has 34 growers of pedigreed Grimm and Cossack alfalfa.

No effort need be made to increase the number of alfalfa seed growers as there is danger of getting a larger acreage than can be properly cared for. - H. L. Lantz, County Agent, Malta, Phillips County.



The campaign to increase the acreage on alfalfa was started in December, 1921, by publicity giving facts on the yields and seed production on farms in the county. This was followed up by conducting a two-day seed exchange with meetings. A large crowd was present on these two days and 43 new growers of alfalfa were supplied with seed. The seed show also had a wonderful effect on the standardization program for all crops.

In 1924, 5 fields were inspected and passed; in 1925, 13 fields; and in 1926, we will have 60 fields to register.

In connection with the growers of pure seed we included a drive for more alfalfa for hay and 800 acres were planted by 30 farmers and stockmen. This county now has approximately 2,500 acres in alfalfa, an increase of 800 per cent in two years. - Grover E. Lewis, County Agent, Terry, Prairie County.

### New Hampshire

To help meet the need of better roughage, alfalfa growing has been urged during the past two years and will be given extra stimulus the coming year.

Stories on the value of alfalfa as a feed, and stories of other farmers' success with this crop have been given widespread publicity through newspapers, bulletins, and meetings.

Several years ago a few areas of 1/4 and 1/2 acres were seeded for trials, but no special effort was made to increase the alfalfa acreage until 1924. By this time the earlier seedings had demonstrated that, with care, alfalfa can be grown successfully in this county.

In 1924, I concentrated my efforts on persuading farmers to give alfalfa a trial and in assisting them to get this crop properly started. Exhibits were made at several fairs and farm-bureau meetings. These exhibits emphasized the value of this crop as a roughage for dairy cattle by showing rations of grain needed with alfalfa and with timothy hay. About 50 acres of alfalfa were started in 1924.

In 1925 considerable time and effort were again spent in personal work with individual farmers persuading them to give alfalfa a trial, assisting them in getting it started, checking results, and following up the handling of the areas to insure a good stand next year.

An original feature undertaken to promote alfalfa growing was an alfalfa banquet which proved highly successful. At this banquet the table decorations were roots of clover and alfalfa from the same field seeded in June, 1924. This illustrated the deep rooting habit of alfalfa and emphasized the reason for its yielding even in dry seasons. The center piece at the speakers table was a large bunch of flowering alfalfa, the second cutting of a single alfalfa plant. A bunch of dry hay from the first cutting was also used. This emphasized the starting habit and heavy second growth of alfalfa. Fifty people from all parts of the county attended this banquet, nearly all of whom will make excellent local leaders in the project in 1926. - W. L. Furkhouser, County Agent, Keene, Cheshire County.

### New Mexico

Hairy Peruvian alfalfa continues to increase in favor with the farmers of the Rio Grande Valley. During the winter of 1924 this variety of alfalfa withstood winter temperature of 11° below zero for over one week, and there was practically no winterkilling. There was less than 1 per cent loss on areas which were counted to determine if there had been winterkilling. Only one farmer





in the county reported the loss of his alfalfa from winterkilling, and he acknowledged to the county agent that it was due to his failure to irrigate his alfalfa before winter set in. His neighbor's field of Hairy Peruvian alfalfa which had been fall-irrigated came through the winter in fine condition. As a result of this experience with temperatures much below the average for this valley, we feel safe in recommending Hairy Peruvian alfalfa to farmers for general planting.

This year 6 000 pounds of Hairy Peruvian seed were imported and sold into Valencia County. If this seed were planted at the rate of 15 pounds per acre as recommended, it would mean that 400 acres of new alfalfa were planted in 1935.

Hairy Peruvian alfalfa continues to outyield the Common, Turkistan, Grimm, and Cossack varieties from 25 to 40 per cent annually. Hairy Peruvian alfalfa grows from 8 to 12 inches taller than the other varieties on the same soil. It also makes earlier and later growth than the other varieties, thus providing a greater quantity of pasture. When the Turkistan alfalfa is completely dormant, the Hairy Peruvian is still green. When a fourth cutting of alfalfa is obtained, the Hairy Peruvian doubles the yield of the other varieties because of its late growing nature.

The Hairy Peruvian alfalfa seed was purchased from the Yuma Valley seed growers, was certified pure seed, and was purchased as cheaply as poor and ordinary varieties of like purity and cleanliness.

Only spring planting of alfalfa is recommended in this county, as the water supply for irrigation is sometimes short for fall planting.

Hairy Peruvian alfalfa has a large percentage of leaves to stem, and when properly cured makes an excellent pea-green hay and seems to cure a lighter green than other varieties.

The popularity of Hairy Peruvian alfalfa is not confined to Valencia County, but the farmers in the adjoining counties - Bernice and Socorro - are now planting this alfalfa as the result of demonstrations started and concluded by the county agent. These demonstrations have proved to be worth thousands of dollars to this valley. - R. S. Conroy, County Agent, Ros Lunas, Valencia County.

### North Dakota

A number of alfalfa demonstrations have been conducted to determine the best methods of obtaining a stand and what rate of seeding is the most economical and satisfactory. In all demonstrations seed of the best grade was procured from registered Grimm fields, and all of the seed was hulled and scarified. The results indicate 5 to 6 pounds per acre of this grade of seedlings. Below are given the detail of soil preparation, method of seeding, and the character of the stand obtained in the various demonstrations:

Abe Herder, of Lostwood, seeded 8 acres of alfalfa on 1924 corn ground. The land was double disked the latter part of May and gone over with a plow to smooth it. The alfalfa was seeded June 1, with a double disk drill at the rate of 5 pounds per acre. No nurse crop was used and the alfalfa was not clipped. A good stand resulted. There was some growth of Russian thistle in the late summer but it was left on the field to furnish additional winter protection and will be raked off and burned in the spring of 1926.



Alfred Peterson, of Stanley, seeded 3 acres of alfalfa on 1924 corn ground. The ground was double disked and harrowed on April 25. On June 10, it was again double disked lightly and harrowed, to kill any weeds started. This land had been in sweet clover in 1923 and no inoculation was used. Just after the last disking 200 pounds of barley and 15 pounds of alfalfa were seeded with a drill on the 3 acres. The ground was gone over with a subsurface packer before and after seeding. A very good stand of alfalfa resulted.

Cornelius Friesion, of Lostwood, seeded 2 1/2 acres of alfalfa on ground which had been in sweet clover in 1924 and used for hay. The land was fall-plowed, harrowed seven times, and gone over with a packer. The alfalfa was mixed with oats, using 1 1/2 bushels of oats and 12 pounds of alfalfa seed per acre. The oats were cut green when well headed. A good stand of alfalfa was obtained, but not materially better than where lighter seeding was used.

P. P. Harder, of Lostwood, seeded 2 acres of alfalfa on 1924 sweet-clover ground. The land was spring-plowed and harrowed six times. On June 1, 12 pounds of seed per acre was seeded with a drill. No nurse crop was used and a good stand was obtained.

John Unruh, of Lostwood, seeded 6 acres of alfalfa on land which in 1924 produced a crop of sweet-clover hay. After the hay was taken off, the field was summer-plowed and harrowed in the fall. In the spring of 1925 it was double disked and harrowed twice. On May 13, 140 pounds of flax and 48 pounds of alfalfa were seeded on the 6 acres, the seed being mixed and sowed with a drill. A good stand was obtained.

Henry Friesion, of Lostwood, seeded 3 acres of alfalfa, on land which, in 1924, produced one crop of sweet-clover hay and was then pastured. The ground was plowed in the spring of 1925 and harrowed four times. On May 10, 1 bushel of oats per acre was sown and 30 pounds of alfalfa broadcasted on the 3 acres and harrowed in. A good stand was obtained but the lighter seedings appeared to be practically as good. It is possible that broadcasting the seed and harrowing it in does not give so satisfactory germination as drilling.

Seven members of the junior dairy heifer club at Van Hook and Sanish and two members of a dairy club at Ross each conducted 1-acre alfalfa seeding demonstrations. Owing to the fact that all these demonstrations were conducted in the same way and all obtained good stands, they are not described individually. In all the nine demonstrations, land which had been in corn or potatoes in 1924 was used. The ground was well disked the latter part of April and kept harrowed sufficiently to kill all weeds. On June 1, 5 pounds of seed were broadcasted on each acre plot. The seed was inoculated in each case. No nurse crop was used and the alfalfa was not clipped as there was practically no growth except Russian thistle which was left for protection during the winter and will be raked off and burned in the spring. All the demonstrations have good stands. - A. J. Bredvold, County Agent, Stanley, Mountrail County.

## Oregon

When the county agent arrived in Lane County he found much interest in demonstrations to show how to grow alfalfa. M. M. Boney, manager of the Eugene Farmers' Creamery, reported that he and the officers of the creamery had been considering the advisability of financing a number of alfalfa tests and asked if the county agent would be willing to cooperate with them and the farmers if they decided to carry on the project. On February 16, E. R. Jackman,



farm crops specialist, and the county agent met with officials of the creamery and discussed the proposition. At that time the directors voted to purchase one-half the seed necessary for twenty-five 1-acre tests of Grimm alfalfa and one-half the lime necessary to apply lime to one-half of each demonstration at the rate of 1 ton per acre. Details of the demonstrations and the selection of demonstrators were left to the county agent and other representatives of the Oregon Agricultural College.

The creamery purchased an especially fine lot of pedigreed Grimm alfalfa seed from Volberg, Mont., for the demonstrations. The seed was from plants grown in rows and cultivated and was entirely free from weeds. Although the original plan of the creamery was to purchase just enough seed for the cooperative demonstrations, so many farmers asked for seed that additional orders were accepted and 1,460 pounds of seed were distributed during the season. The creamery sold this seed to the farmers at cost, 54 cents per pound delivered at Eugene.

The county agent received requests for many more demonstrations than could be financed on the cooperative creamery plan. Thirty-one farmers living in 25 communities planted approximately 27 acres of alfalfa in cooperation with the Eugene Farmers' Creamery and the county agent. Practically all the demonstrators applied lime at the rate of 1 ton per acre to one-half of the demonstration plot and land plaster at the rate of 75 to 100 pounds per acre to one-half the plot. The lime and plaster were applied so that part of the plot was treated with lime only, part with land plaster only, part with lime and plaster, and part received no treatment.

The county agent has records of 71 farmers, in addition to the 31 mentioned above, who planted alfalfa in 1925. Practically all these independent growers sowed Grimm alfalfa and followed the planting instructions outlined by the Oregon Agricultural College and distributed by the county agent. Pure culture for the inoculation of alfalfa was distributed by the county agent for 83 plots. Inoculum was furnished free of charge to the 31 cooperative demonstrators.

The alfalfa demonstrations have been followed closely throughout the year by the county agent and pertinent data have been recorded. Practically all the demonstrators obtained good stands and most of the plots are free from weeds. - O. S. Fletcher, County Agent, Eugene, Lane County.

Many alfalfa fields were injured by the severe freeze last winter, but a check of the fields showed that in no place did the Grimm winterkill. Where it was possible to compare fields of Grimm and Common alfalfa, it was found that Grimm was not damaged and Common was damaged at least 50 per cent.

Orders for 1,700 pounds of certified Grimm seed were pooled through this office. As it was an unfavorable spring to get a stand of alfalfa, a number of growers are holding this seed until 1926.

Jess Lower and Elmer Westervelt, in the Boardman community, saved some of their second cutting of alfalfa for seed. Although this crop was not handled properly to obtain maximum results, it gives great promise to alfalfa seed raising as a cash crop for irrigated districts. In fact, alfalfa seed raising in this community looks so promising to Mr. Lower, that he is selling his common alfalfa seed and buying Grimm to seed 40 acres next spring, as Grimm seed always sells at a premium over Common. When the seed pool was being made up last spring the county agent suggested to I. Skoubo that he plant a small amount of Common alfalfa along with the Grimm. Mr. Skoubo replied that three years ago, at the suggestion of the county agent, he had done this and was now reseeding the Common, which winterkilled with Grimm. - Roger W. Morse, County Agent, Hoppner, Morrow County.



One of the most valuable pieces of extension work in Wasco County was introducing the use of sulphur on alfalfa. It has practically made the alfalfa industry in the county, for without sulphur this crop can not be grown successfully over a period of years.

Conservatively this project has been worth \$250,000 in increased yields, increased land values, increased diversification, and reduced sulphur prices. That alfalfa is becoming a paying crop is evidenced by the fact that the acreage is increasing at the rate of 300 to 500 per year.

In order to encourage the use of sulphur this office pooled orders for about 96 per cent of the farmers each year. These pooled orders have grown from 16 tons in 1921 to 40 tons in 1923. Pooling orders has not only increased the amount used, but has reduced the price of sulphur from \$90 per ton in 1921 to \$54 per ton in 1923. - C. W. Daigh, County Agent, The Dalles, Wasco County.

### Utah

Alfalfa seed production is a major industry in several of the counties of this State. During the year 22 method and 56 result demonstrations were conducted on 841 acres in 6 counties. Improved practices were adopted on 193 new farms.

In Portage and Corinne districts in Box Elder County work on alfalfa seed production has been conducted. The main object of the work was to demonstrate the value of cultivation as compared to no cultivation, and proper irrigation methods. Striking results were obtained in favor of cultivation, especially in Portage district. On the Bishop Perkinson farm cultivated fields adjoining uncultivated fields yielded twice as much seed and were free from weeds.

In Emery County the alfalfa weevil did considerable damage in 1923. Where the alfalfa fields were cultivated in the spring after early irrigation and the oil pan was run through the fields before blooming time, the seed crop was normal, but where no work was done the weevil kept the plants from making a good bloom and the fields were cut for hay.

In 1925, 21 Sevier County farmers planted 156 acres of Grimm alfalfa on land where the water table was too close to the surface to produce ordinary alfalfa successfully. So far the stands are good. - J. C. Hogenson, Extension Agronomist, Agricultural College of Utah, Logan.

### Wisconsin

Alfalfa was one of the major projects for the year, and considerable time was spent promoting this valuable legume crop. We endeavored to carry this campaign into every community of the county, giving all farmers an opportunity to become more familiar with alfalfa and encouraging them to grow a few acres to feed the livestock on their farms. In this campaign the farmers' clubs, cooperative creameries, and county newspapers assisted materially in bringing about a tremendous increase in alfalfa. Two thousand circular letters were sent to all parts of the county and hundreds of alfalfa bulletins were distributed. Thirty meetings were held.

Through the alfalfa pool, 14,000 pounds of choice certified Grimm alfalfa seed were distributed. The farmers realize the importance of using only hardy Grimm seed for obtaining permanent stands in this locality. The alfalfa tour held in July was a success. Persons from all parts of the county and business men from adjoining counties participated in this tour, which comprized 54 automobiles. Ten stops were made, at each of which some object lesson on alfalfa growing was brought out.





The Wood River Cooperative Creamery staged the "crowning of the alfalfa queen" ceremonies. This was a unique, beautiful affair, and the first of its kind in Wisconsin. This splendid feat was re-enacted the day of the alfalfa tour. The Wood River creamery has 153 patrons, 30 of whom are growing alfalfa. The creamery challenges any other organization in the State to show a higher percentage of its members growing alfalfa.

Five hundred and twenty-one samples of soil were tested for acidity. Approximately 96 per cent of all soils tested showed acidity in varying degrees, the average amount of lime required to correct acidity being about 2 tons per acre. Prospecting for more marl deposits resulted in 35 marl beds being located in various parts of the county.

Burnett County has approximately 1,300 farms which average 10 head of cattle per farm. The acre of alfalfa hay feeds the head of cows and yearlings during the hay-feeding season. At a conservative estimate 9,000 acres of hay are needed to feed the cattle now on farms. In 1923, Burnett County had only 111 acres of alfalfa. Data shows that 2,500 acres of alfalfa were cut for hay in 1925. Although wonderful progress has been made in introducing this legume, there is still much to be accomplished to economically feed the livestock of the county. - Edwin H. Thompson, County Agent, Webster, Burnett County.

Alfalfa's working its way into the agricultural program of practically every community in the county. Alfalfa started as a project in 1924 when 21 farmers throughout the county agreed to plant from 1 to 2 acres for trial fields. The results were so successful that in 1925 35 new farmers planted 2-acre fields and many more will plant 1 to 2 acres in 1926.

The practices followed to insure a good stand were: To procure the best seed; fall-sow the land; kill the first growth of annual weeds; inoculate promptly with fresh culture from the State College of Agriculture; and plant with a proper cover crop.

Every farmer who grows alfalfa was given a bulletin in which the essentials of alfalfa growing were described. Seed orders were pooled, and the seed - Grimm - was purchased from South Dakota. Inoculating culture was ordered from the university, and the seed and culture were distributed through the county agent's office. About one-half of the seed was inoculated by the county agent.

Alfalfa is in this county to stay and the acreage will steadily increase. The farmers know now that lime, good seed, inoculation, and a good seed bed insure a stand. - Frank R. Peterson, County Agent, Florence, Florence County.

In 1925, when more marl and paper mill sludge was used than ever before, Portage County farmers cut 1,500 acres of alfalfa which is an increase of 274 per cent over the amount cut in 1924.

In order to determine the farm value of an acre of alfalfa, a questionnaire was sent to several hundred alfalfa growers who were selected at random. The following information was obtained from nearly 100 growers concerning their 1925 alfalfa as compared with their timothy and clover for the same season:

	Alfalfa	Timothy and clover
Yield per acre . . . . .	2.3 tons	1.16 tons
Value per ton . . . . .	\$22.50	\$15.00

Using the farmer's own figures for the yield and value, the hay for one year from 1,500 acres of alfalfa was worth \$84,000 as compared to \$26,000, the value of an equal acreage of timothy and clover. Thus it is evident that farmers who have alfalfa value it highly. - H. R. Noble, County Agent, Stevens Point, Portage County.





