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Wisconsin's Opportunity with Alfalfa

TWENTY-FIRST ANNUAL REPORT OF
THE WISCONSIN AGRICULTURAL
EXPERIMENT ASSOCIATION
MADISON, WISCONSIN

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

MADISON, WIS., 1923.

To His Excellency, J. G. BLAINE,
Governor of the State of Wisconsin:

Sir:—I have the honor to submit for publication, as provided by law, the Twenty-first Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, and giving an account of the Association's activities in promoting progressive agriculture.

Respectfully submitted,

T. H. CAMPION,
President.

FOREWORD

To those who have never tried alfalfa—

To those who have carelessly tried and failed with alfalfa—

To those who have had fair success with alfalfa—

To those who have been very successful in growing alfalfa—

"Wisconsin's Opportunity With Alfalfa" is written and dedicated as a feature of the twenty-first annual report of the Wisconsin Experiment Association by

L. F. GRABER.

R. A. MOORE

Portrait presented by the members of the Experiment Association and other friends to the College of Agriculture, June 22, 1923, in recognition of his service to the state.

A Pioneer of Pure Bred Grains

ALL THE traditional qualities of the American pioneer—unfaltering courage, boundless determination, and the ability to create opportunity—are exemplified in the life of R. A. Moore who has done more than any other man to make Wisconsin grains world-famous.

His early life was typical of the pioneer. Born June 5, 1861, on a farm near Kewaunee, Wisconsin, his character was moulded by the hardships of pioneer life. As a rugged youth he helped his father to wrest a fertile soil from the age-old forests. In the winter months he trapped for furs and tramped for thirty-two miles to Green Bay, the trading post, to sell them. At night by the lurid light of his father's burning lime kilns which he tended, he read and studied the books of history and civics which his grandfather gave him. Only six months was he able to spend in the country school, yet through self-education, he passed the examination and was granted a teaching certificate when he had reached his majority. For eight years he taught in the country and graded schools and was then elected superintendent of schools in Kewaunee county, an office which he held for six years.

In the meantime, Dean W. A. Henry was pioneering in the development of the College of Agriculture. He had heard of Mr. Moore and decided this was the man needed to aid in the herculean task he had assumed. He induced Mr. Moore to join him under the title of "Assistant to the Dean" in 1895 and directed his energies in organizing the short course. Traveling in Dane county from farm to farm with a horse and buggy, later going to local fairs out in the state with a tent and exhibit of what the short course had to offer, Mr. Moore soon made his department one of the outstanding features of agricultural education in Wisconsin.

The vision of the opportunity for grain improvement work in Wisconsin came in part from a visit with Willet M. Hays of the University of Minnesota, who had shown Mr. Moore his splendid breeding plots on wheat and, in part, from the farm visits which were made in behalf of the short course where Mr. Moore had an opportunity to observe the nondescript type of grains that were being grown. He urged the necessity for grain breeding and dissemination but Dean Henry had no funds to carry on the work. Mr. Moore was so persistent that the Dean finally set aside one acre of land (where the Stock Pavilion now stands) to be used for grain breeding plots. Mr. Moore, however, was to bear, personally, whatever expense might occur in getting seeds and was to do his own sowing and harvesting.

Mr. Moore immediately secured numerous strains and varieties of grain from Canada, from the United States Department of Agriculture and from various states. He sowed them in breeding plots alongside of local strains which he collected while touring the state on a bicycle to interest young men in the short course. He soon noted a surprising superiority in some varieties, from which he made careful selections. As soon as it was possible, Dean Henry provided for the expansion of Mr. Moore's efforts. The grain breeding plots were increased and large areas were devoted to select seed production.

Mr. Moore organized the Experiment Association in 1901 with 187 charter members and later the boys and girls club work with several thousand members. He used these means for the distribution of his improved grains. Such was the beginning of the work that has made Golden Glow, Silver King, Swedish Select, Oderbrucker, and numer-

ous other pedigreed grains household words on the average Wisconsin farm.

For these great accomplishments which have been of untold value to Wisconsin we render "honor to whom honor is due." Mr. Moore has not only devoted his life to grain breeding, but he has been the inspiration for young men to climb the ladder of success. He fostered a pride in rural life which has made many a young farmer more fully conscious of his opportunities. Mr. Moore had not the advantage of a university training, yet his accomplishments show what energy, perseverance, and enthusiasm may achieve here in America.

L. F. G.

A SAFE AND SANE REMEDY

Alfalfa, Remedy for Farm Ills

THE FARMER has had a hard lot for the past three years. Here is what the United States Department of Agriculture said about it in a circular for November, 1922:

"The farmer is about in the position of a six-foot man who has been standing in five feet of water and now sees it beginning to rain. When deflation overtook the country in 1920, agriculture fell first, hardest, and farthest. It seemed to recover a little last spring as prices of cotton, hogs, and wool improved. But now the disparity is again so widening between prices of farm products and industrial products that it is becoming something for the community to take account of.

"This is the third successive year of big crops. That is the farmer's way of trying to pull himself out of a hole of debt. He does not strike. His stake in the country outweighs his grievances. He works.

"It is not alone that farm products stay low, but that manufactured goods have again started upward. Urban industry has during the summer pushed up its wages and prices so far out of line that the community is enjoying its abundance once more very largely at the farmer's expense."

Alfalfa Brings Prosperity

Better times are ahead, if we take advantage of existing conditions. There are real money making possibilities in growing alfalfa hay and we may look to this crop as one remedy for many of our farm ills.

Although prices on oats, barley, rye and corn have been at such a low ebb that the profitable growth of some of these crops might have been questioned, alfalfa hay has been selling in Wisconsin at from $20 to $30 a ton. Wisconsin farmers are sending millions of dollars out of the state for high protein feeds and hay which might well be grown at home with far greater profit by the production of more alfalfa. The average yield of alfalfa hay in Wisconsin is nearly three tons an acre. This is, at least, a ton more than the hay produced with any other hay crop. Three tons of hay an acre will give a gross market value of from $50 to $75 an acre. The average annual cost of growing and harvesting an acre of alfalfa over a period of years is seldom in excess of $30. Deducting this cost of production, leaves a profit margin of from 25 to 45 dollars. This exceeds by a wide margin the profits obtained with oats and other small grain.

Too Much Timothy

Wisconsin's tame hay fields cover some 2,800,000 acres. Of this immense area 89 per cent is devoted to timothy growing with a thin sprinkling of clover thrown in. To be exact 18 per cent is pure timothy and 71 per cent is mixed timothy and clover. Unfortunately mixed timothy and clover is for the most part a combination of 80 to 90 per cent timothy and 10 to 20 per cent clover hay. For the

two most profitable hay crops—alfalfa and clover—only 11 per cent of our tame hay land area is being used. Farms in the older sections of the state are not growing clover as they did years ago. The soil

ALFALFA TOURS INSPIRE AND STIMULATE BIGGER ACREAGES

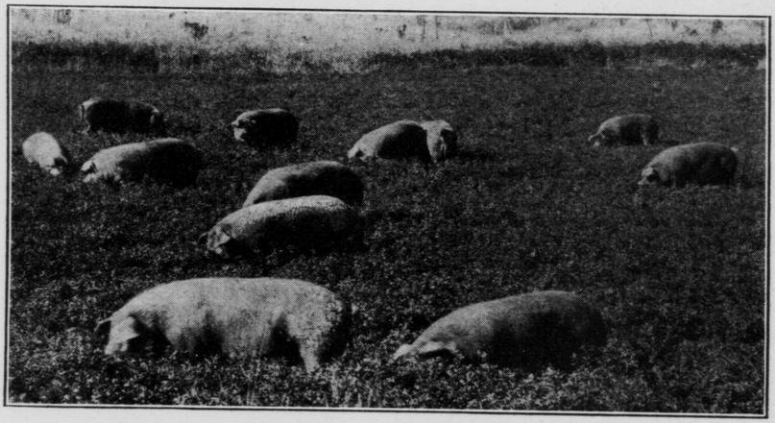
One of several automobile excursions to the famed Cornfalfa Farms, Waukesha, Wisconsin.

is becoming deficient in lime and in large areas of Wisconsin, clover is becoming more and more difficult to grow.

Timothy with only 3 per cent digestible protein compared to alfalfa with 11 per cent, is one of the poorest feeding hays for dairy stock, young stock, old stock and all stock except horses. Still this is our predominating hay crop. With more alfalfa and better clover we can reduce the feed bill and increase the farm profit.

Farmers Want Alfalfa Facts

That farmers appreciate this situation is indicated by the tremendous demand for information about successful alfalfa growing. Thousands



ALFALFA BEST HOG PASTURE

For a period of 5 years (1916-20) alfalfa excelled all other hog pastures in profitable pork production at the Wisconsin Experiment Station.

of bulletins are sent out annually and hundreds of letters are sent each month in answer to inquiries on the details of alfalfa growing. The calls for speakers on alfalfa at various meetings throughout the state are far in excess of what the Agronomy Department is able to supply in spite of the fact that Peter Swartz, Frank Bell and others of the institute force are out practically every week of the winter season.

Fortunately during the past ten years, through the work of the Alfalfa Order, and the experimental trials at the Experiment Station Farm, we have collected a fund of information which has made alfalfa one of the safest, surest and most profitable hay crops which can be grown in the older farming areas of the state.

ALFALFA EXCELS

THIS CROP leads all other hay crops, where it can be successfully grown, in—

Yields. The ten-year average for Wisconsin is 2.7 tons an acre for alfalfa and 1.6 tons for timothy and clover.

Ability to stand drought, especially with new seedings which often survive the dry weather of the summer when clover and timothy are killed out.

Eradication of bad weeds such as Canada Thistles, morning glories and all other serious weeds, except quack grass which alfalfa does not conquer.

Permanence as a legume. While alfalfa may winterkill from time to time, the fields of hardy varieties generally last much longer than the clovers. This makes hardy alfalfa exceedingly valuable for hilly fields which, under a system of frequent plowings, would wash badly with much loss of valuable soil.

Feeding value. Alfalfa is not greatly superior to well cured red and alsike clover but it appears to be more palatable.

Market and farm value exceeds that of any other hay crop.

HOME GROWN ALFALFA PROTECTED IN PRICE FROM WESTERN COMPETITION

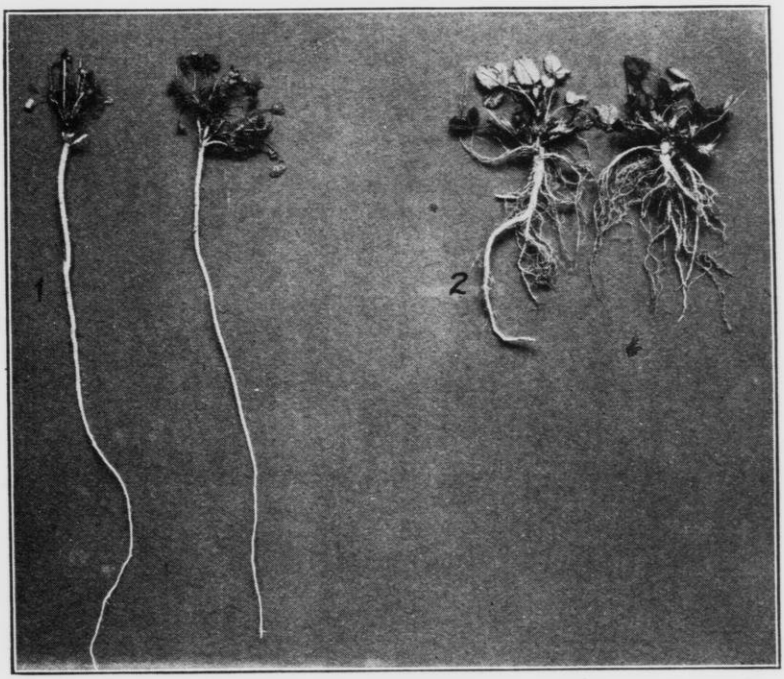
While western alfalfa hay has been selling at from $5 to $10 a ton in the stack, the costs of transporting this bulky product from the far western states has made the market price in Wisconsin range from $20 to $30 a ton.

FACTS MAKE ALFALFA SUCCEED

REMARKABLE discoveries about growing alfalfa in Wisconsin have been revealed by careful investigations through the members of the Alfalfa Order and at the Experiment Station for the past ten years.

1. New alfalfa seedings stand dry weather far better than red or alsike clover or timothy.

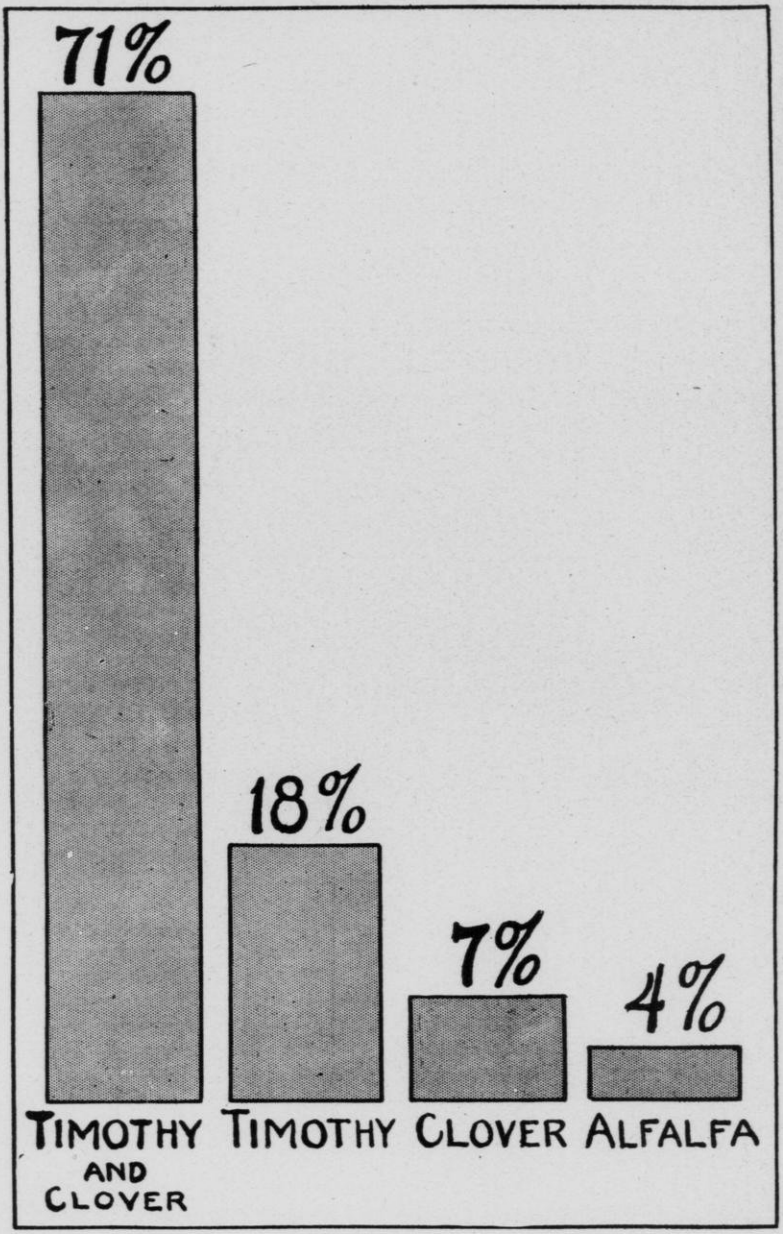
One of the many examples of this significant fact occurred on the Pabst Stock Farm, at Oconomowoc, where 150 acres of new seeding



WHY ALFALFA STANDS DROUGHT BETTER THAN CLOVER

The deeper tap root growth of alfalfa seedlings (1) as shown above compared to the shallower spreading type of roots for red and alsike clover seedlings of the same age (2) explains how alfalfa under favorable soil conditions is often a surer crop than clover because of its greater ability to secure moisture out of the soil in times of severe drought.

of timothy and clover was completely wiped out by the summer drought of 1921, while 70 acres of new alfalfa seeding produced under the same conditions came through the dry period without injury and yielded a splendid crop of hay the following season. Where soils are favorable for alfalfa, the deeper root growth of this crop makes it more certain and more easily established than timothy and clover.



WISCONSIN HAY CROPS

Of the 2,800,000 acres of hay in Wisconsin 2,000,000 acres are devoted to timothy and clover which is mostly timothy; 500,000 acres to pure timothy and only 300,000 acres to our best hay crops, alfalfa and clover.

2. Early removal of nurse crop by cutting the grain for hay or by seeding with early canning peas gives alfalfa a good vigorous start and makes a catch almost sure.

Where soil conditions are not entirely favorable for alfalfa, the early removal of the nurse crop by cutting the grain for hay aids very materially in getting a stand by saving tons of soil moisture which would be otherwise used up in the ripening process. This reserve moisture gives the alfalfa plants a strong deep "lime-getting"

CUT LODGED GRAIN FOR HAY

Early removal of the nurse crop for hay, especially in case of lodged grain, is an important step towards success in establishing a good stand of alfalfa.

root system which largely eliminates the danger from summer drought and the invasion of grasshoppers.

3. Growing alfalfa on soil without lime in the limestone regions of Wisconsin where the surface soil is often somewhat sour while the sub-soil may contain a considerable amount of lime.

Where the nurse crop is cut for hay at an early date, the alfalfa plants develop a deep growth of the roots and often sufficient lime is obtained from the sub-soil so that good success with alfalfa may occur even though the surface soil may have a slight degree of acidity. This is particularly true when the soil is well manured or very fertile.

GROW CROPS THAT WORK HARDEST FOR YOU

Would you keep a hired man who slept 'til noon? Alfalfa works from early spring until fall, while timothy only puts in half time—sleeping most of the summer.

This plan has made possible the growth of alfalfa by many farmers who are not situated so that they may use lime, much as they would like to, but whose soils are of limestone origin and are sufficiently fertile to produce fairly good growths of alfalfa, provided new seedings

AN EARLY REMOVED NURSE CROP FOR THICK ALFALFA

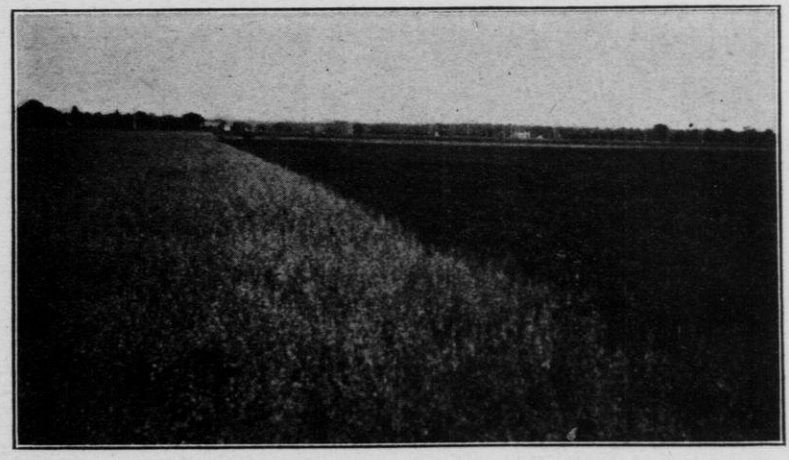
Good stand seeded with one bushel early barley an acre.

Poor stand seeded with three bushels of late oats an acre.

are given an opportunity to make a deep "lime getting" root development. The following seed mixture serves very well for the above circumstances:—15 lbs. of alfalfa seed, 2 lbs. of alsike and 3 lbs. of timothy.

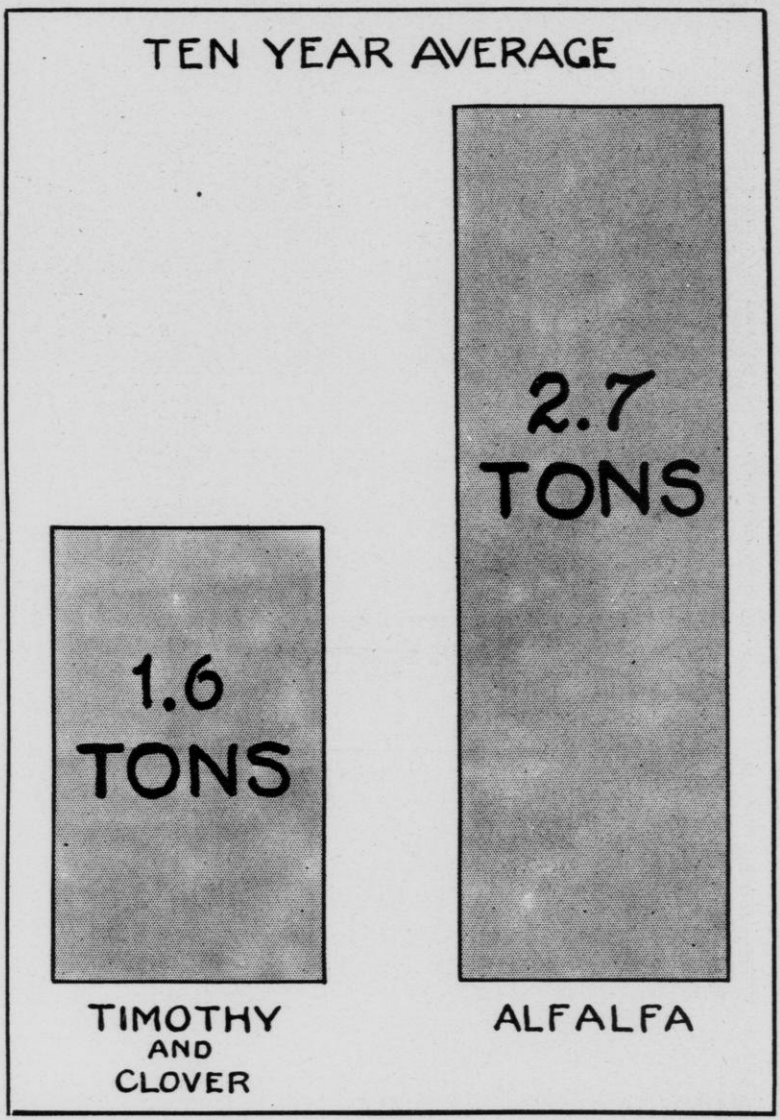
4. New seedings hardier than old stands of alfalfa.

The conclusive evidence which we have collected points to one way in which farmers may reduce winterkilling losses. By establishing new stands of alfalfa every year or so there is less chance of winter-



NEW SEEDING OF GRIMM ON THIS FLAT LAND LIVED THROUGH THE ICE SHEETS AND SEVERE WINTER OF 1921-22

This 70 acre field of new Grimm seeding survived, but an adjacent three year old field of Grimm killed out and was plowed and seeded to the oats you see (to the left) in the picture.



MORE FEED FROM LESS ACRES

Alfalfa growers are averaging one ton more of hay an acre than those content with timothy and clover. (Wisconsin Statistics for 1911-1920).

killing than is true when we depend entirely upon our old stands to weather through unfavorable climatic conditions.

It is surprising the amount of abuse new seedings of hardy Grimm alfalfa will withstand from such injurious climatic conditions as ice sheets—alternate freezing and thawing and extremely low temperatures without a protecting covering of snow. On the Pabst Stock

ALFALFA MIXED WITH TIMOTHY

The alfalfa-timothy mixture is popular on many farms for it helps keep out the blue grass and increases the yields, when winterkilling occurs. Some object because it lowers the feeding value of the hay. They do not like timothy.

Farms several hundred plots of hardy Grimm, Baltic and Cossack, three years old, winterkilled seriously while an adjacent new seeding of 70 acres of Grimm came through the identical winter weather without severe injury.

5. The value of mixing timothy with alfalfa.

While this combination is not suited to all farm needs, many farmers find that the increase in the total yields of hay and the protection which the timothy gives against total loss by winterkilling is such that they favor this combination very much. Some feeders of dairy cattle object very much to timothy mixed with alfalfa on account of its low feeding value.

6. How scarification affects the longevity of alfalfa seed.

Scarified seed lost its germination very rapidly after it attained an age of from two to three years. These data will be given later but the information is of vast importance to seedsmen and others who hold over lots of seed for one or more years.

Shall We Mix Timothy With Alfalfa?

OF THE 101 members who have tried a mixture of one-fifth to one-fourth timothy seed (by weight) with alfalfa seed, 75 favor the combination; 26 are opposed.

Arguments for—

"Timothy with alfalfa keeps out weeds."
"If alfalfa fails, you still have timothy."
"Alfalfa kills in hollows, timothy sticks and keeps out June grass."
"Timothy prevents washing on steep hillsides."
"Helps cure first crop."
"Covers up poor spots."
"Prevents lodging and makes bigger yield."
"Without timothy I would have had to plow."
"Better than nothing when alfalfa winterkills."
"Makes hay crop sure."
"Timothy permits no vacant spots in field."

Arguments against—

"If alfalfa will catch, timothy is a nuisance."
"Timothy checks growth of alfalfa."
"Don't want any timothy in my alfalfa."
"Lowers feed value of hay."
"Timothy gets too thick."
"First cutting mostly timothy."
"Timothy crowds out alfalfa."
"Alfalfa thick enough, don't need timothy."
"Timothy spoils sale of hay."

7. The improvement of alfalfa with age in yields of hay, interests many.

GROWTH OF BUCKWHEAT ON ALFALFA AND BLUE GRASS SODS.

Adjacent blue grass and alfalfa sods were plowed and seeded to buckwheat early in July. After three weeks growth, sample (3) shows twenty average plants from the alfalfa sod, and (4) twenty average plants from the blue grass sod.

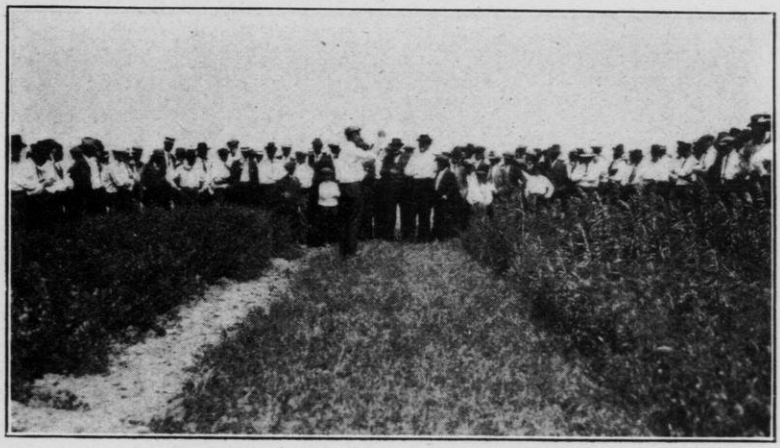
With an equally good stand, a field of alfalfa three years old yields more as a rule than will a one-year-old field. On account of the development of an extensive root system of great depth, alfalfa has a

CUT OUT COSTLY FEEDS BY GROWING MORE ALFALFA

better feeding capacity in the soil and a greater resistance to drought after it is three years old than it does in its second year's growth.

8. Determination of the value of Grimm and other hardy varieties of alfalfa and the development of dependable sources of hardy seed.

While Grimm or any other variety of alfalfa has not proven to be entirely winter-proof under Wisconsin conditions, it has shown in many cases its superiority in hardiness to that of the common strains. As chairman of the committee appointed by the International Crop Improvement Association at Chicago, Illinois, the secretary of the Alfalfa Order, assisted in formulating rules and regulations for the



DEMONSTRATION FIELD DAY

At the Experiment Station, Madison, Wis.
Over 2400 farmers saw the results of alfalfa cutting trials and varieties in June, 1922.

certification of improved varieties of alfalfa seed. During the past year a large quantity of certified hardy alfalfa seed, put up in sealed and branded sacks by western growers' associations, has been available for Wisconsin farmers.

9. Danger of cutting alfalfa too early.

The detrimental effects of early cutting in reference to weakening the growth and lowering the yields of alfalfa as well as reducing its winter resistance has been worked out quite carefully during the past three years.

10. Two crops of alfalfa yield better than three.

Early cutting and its attending ills is of such a serious nature that in actual trials heavier yields are obtained from two crops of alfalfa cut in the full bloom stage than from three crops cut in the bud or tenth bloom stages. Late cut alfalfa may be somewhat coarser in quality but the benefits in reduction of labor and the increase in yields, together with the checking of weeds and grasses, seems to more than offset the reduced quality of hay from cutting in the later stages of development.

Alfalfa Best Crop for Sandy Soils

It required no sign board to attract the attention of travelers on State Highway No. 10 to the beautiful field of alfalfa on the farm of E. J. Manzer, Waushara County, Plainfield, Wisconsin, as shown above. The secretary of the Alfalfa Order passed by this place in August just as Mr. Manzer was putting up his second crop in an eight acre field along the road. With a nice, even, perfect stand, about eighteen inches high, of rich dark green alfalfa it was a beautiful sight, for in August the hay fields and pastures of the sand country are brown and bare.

"How did you get this wonderful stand established?" I asked Mr. Manzer.

"Lime and inoculation," was his quick reply. "We put on from two to three tons of lime an acre together with manure and it makes alfalfa grow good and strong. We cannot get along without lime. No lime, no alfalfa, that's all. We know, for we've tried it."

Mr. Manzer believes alfalfa to be the best hay crop for the sandy soil areas largely because of its great drought resistance and splendid yields. He has 21 acres from which he has secured over 60 loads of fine rich hay. He is beginning to grow his own seed and finds that in the initial trial his yields were much better than he expected. For the land's sake we need more alfalfa in the sand country.

WHEN ALFALFA ROOTS REACH CHINA?

Alfalfa in the Sand Country

ALFALFA is making rapid progress on sandy soils where it has oft been declared a failure. The application of the information collected by our association to many of the lighter soils in the central part of Wisconsin has made alfalfa successful. Harold G. Frost, whose farm is located in the southern part of Portage county, has used in the past twelve years thirteen carloads of ground limestone on his sandy farm which has made possible the additional growth of from ten to thirty acres of alfalfa with an average yield of around three tons an acre. E. G. Manzer, Waushara County, has 21 acres of splendid alfalfa on his very sandy soil, the result of lime, inoculation and manure. John Loescher, of Juneau County, is a veteran alfalfa grower who, for the past eight years, has made alfalfa a success on a rather coarse sandy soil. Numerous others might be mentioned.

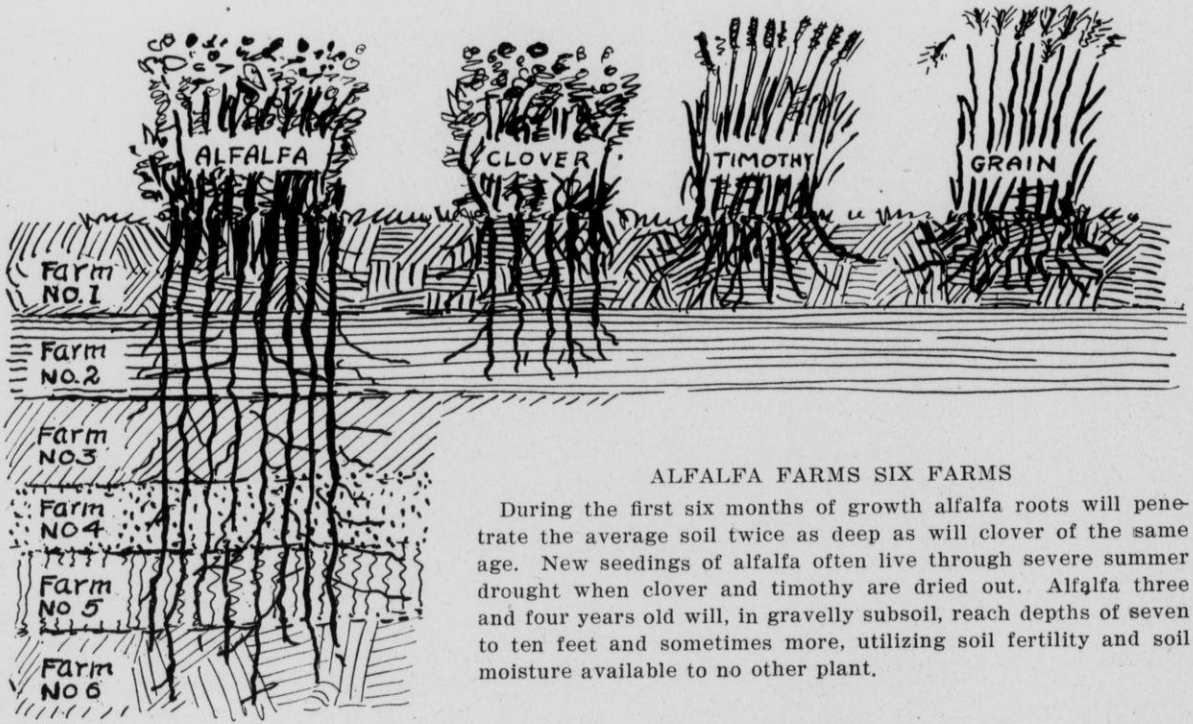
Alfalfa Surer Than Clover

Experienced growers declare alfalfa a surer crop on properly treated sandy soil than red clover on account of the deeper roots and greater drought resistance. If a light nurse crop of early oats is used on sandy soil, cut it just after it heads out and if the growth is not too heavy so as to smother out the alfalfa, allow it to remain on the field. This saves soil moisture and guards against summer's drought. Alfalfa may be seeded alone about May 15th and in the event of summer weeds, they can be cut and permitted to remain on the field to mulch the alfalfa. By the use of a corrugated roller both before and after seeding alfalfa on loose sandy soils, the desired firmness for a rapid early growth is obtained.

Give Alfalfa a Square Deal

Alfalfa requires nothing in the way of soil treatment but what is largely needed to produce the most abundant yields of corn, small grains, and other crops.

Play safe. Get inoculated with the right ideas about growing alfalfa. Sow alfalfa right or don't sow it at all. Give it a square deal if you expect a square deal in return.



ALFALFA FARMS SIX FARMS

During the first six months of growth alfalfa roots will penetrate the average soil twice as deep as will clover of the same age. New seedings of alfalfa often live through severe summer drought when clover and timothy are dried out. Alfalfa three and four years old will, in gravelly subsoil, reach depths of seven to ten feet and sometimes more, utilizing soil fertility and soil moisture available to no other plant.

With the opportunity to produce from two to three tons of alfalfa hay an acre on the light soils, the sandy land farmer is finding his way to profits which heretofore have not been realized, and at the same time he is building up his soil to that higher plane of fertility which will make all other crops yield a greater profit per acre.

LIME, INOCULATION AND MANURE MAKE ALFALFA DOUBLY SURE IN THE SAND COUNTRY

Alfalfa field of O. A. Crowell, Almond, Wisconsin, growing on sandy soil which was limed and inoculated.

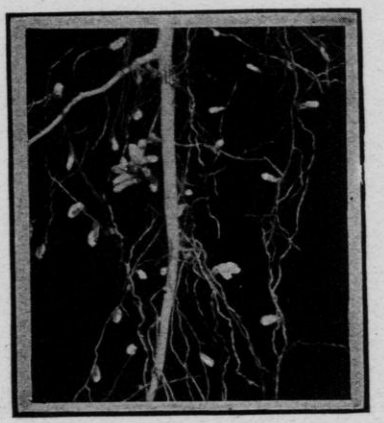
Splendid success has been obtained with alfalfa on the sandy soils at the Hancock Sub-Station and on a measured acre at the Spooner Sub-Station, the average yield for four years has been over three tons an acre in two cuttings. On an old wornout sandy soil in Green Lake County a stand of alfalfa was started five years ago by means of lime, fertilizer and inoculation, and has since produced continually from two to three crops annually with a total yield of not less than three tons an acre. At the time the alfalfa was sown, the average yield of rye on this field was from nine to eleven bushels an acre.

ROLLING MAKES A SPLENDID SEED BED

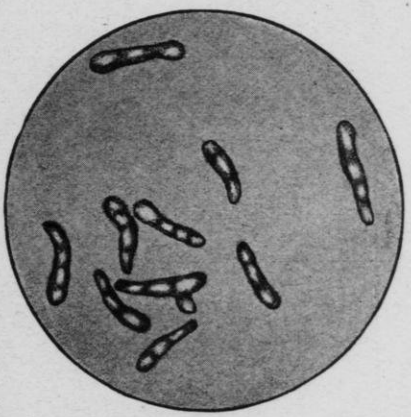
The corrugated roller breaks coarse lumps, firms the seed bed, and leaves the surface loose. It is often desirable to roll both before and after seeding.

Lime Sandy Soils

S. P. Markle, of La Crosse, says:—"In contrast to the latest methods of raising alfalfa, let me tell you of the first alfalfa my father seeded some thirty years ago. When my brother returned home from the West, he was chuck full of alfalfa enthusiasm and persuaded father to try a small field. He chose a plot in a young orchard. After getting the soil in condition, he seeded it to alfalfa. Any old kind of alfalfa was good enough those days as they didn't know anything about Grimm's alfalfa then. He did not apply lime nor inoculate the soil. The weather was fine for seeding and he got



(1) Alfalfa Nodules



(2) Alfalfa Bacteria

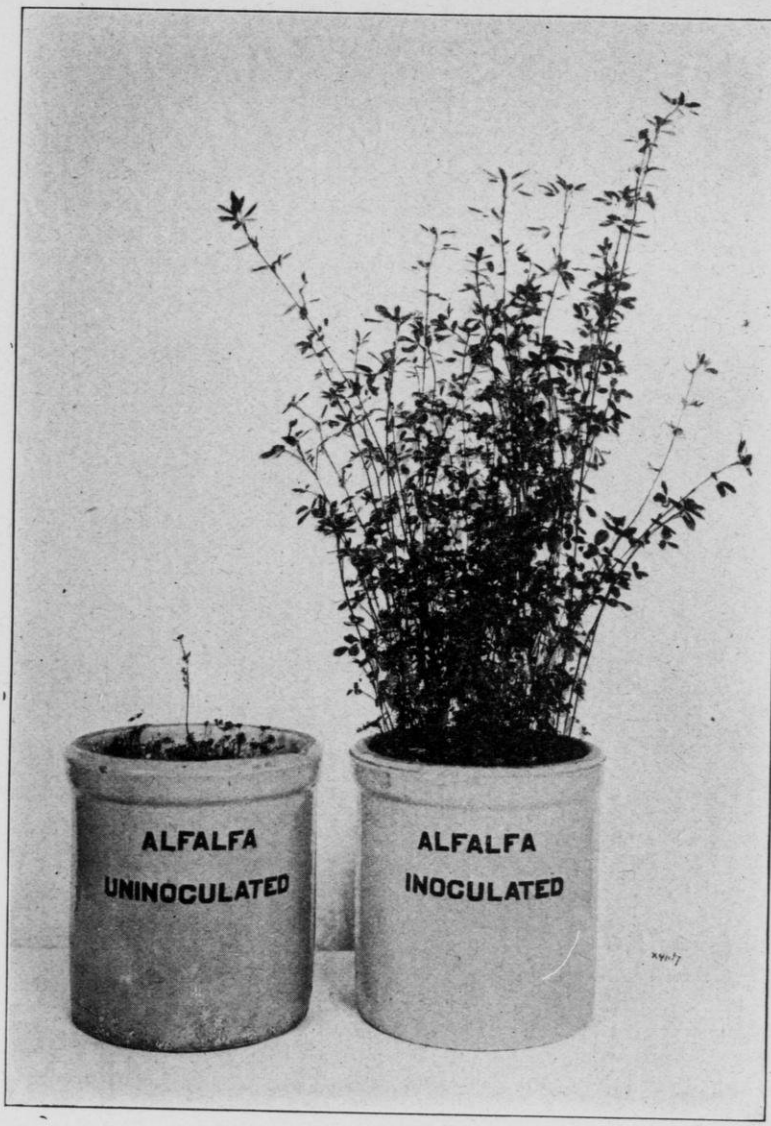
FIG. 11—"FERTILIZER FACTORIES" ON ROOTS OF ALFALFA

The little white swellings or nodules on alfalfa roots are sure indications of proper inoculation. They are the homes of millions of alfalfa bacteria which gather nitrogen from the soil air and convert it into an actual growth-producing fertilizer for the alfalfa plants.

a good stand. But after it got about six or eight inches high, it began to die off. They thought it was drying out and that it needed water as it was irrigated in California. But it didn't all die out. There was about a tenth of a stand left and that stood there for eight years being cut every time they cut the June grass.

"Now, gentlemen, between my home and La Crosse, there were two pieces of sand land that I had never seen produce a crop of anything. It was so poor that no attempt was made to produce one. Today, these same fields are raising fine alfalfa.

"On the agricultural school farm at Onalaska, the managers tried to raise crops of corn, oats and met with nothing but failure. Today, on these same sand knolls, they are raising fine alfalfa and have in five years made fifteen cuttings. Two young men purchased sand farms on Brice Prairie. The neighbors said they would starve out in two years. Today they have modern barns, the farm is fenced and



INOCULATION OR STARVATION

Each jar contains pure quartz sand to which all the necessary elements for plant growth, except nitrogen, have been added. The alfalfa bacteria supplied by inoculation have taken sufficient nitrogen from the air to produce a healthy growth of alfalfa. The alfalfa plants in the sand receiving no inoculation have starved for a want of nitrogen. Especially on sandy and other soils, which may lack nitrogen, inoculation is very important.

they are planning on building new houses. And now their neighbors are looking over the fences and are trying to do the same thing.

"La Crosse County has made it possible for the farmers to get their lime without having it shipped in. While crushing rock for road purposes, they will pulverize lime rock for agricultural purposes at cost, which is less than $2.00 a ton. This is not only a saving in the cost of lime, but in many cases saves miles of hauling, for there are several of these crushers in the county."

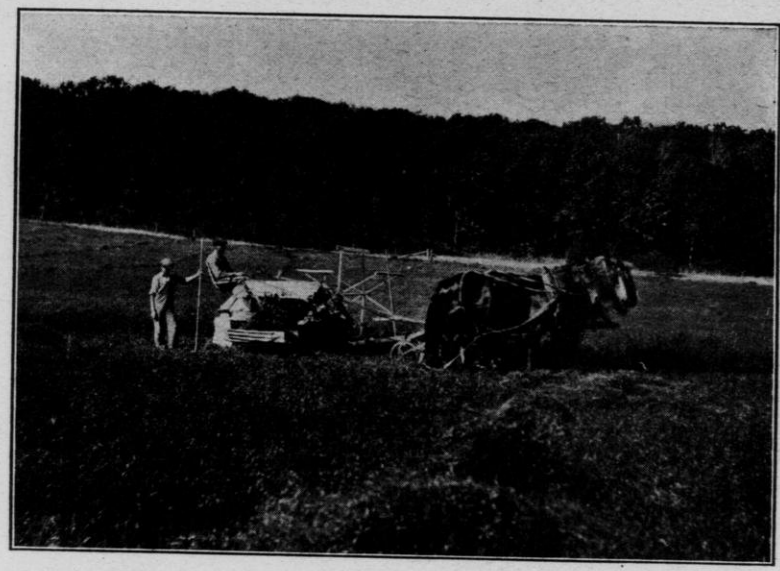
Harold Frost, of Almond, writes:—

"Since about 1910 there have been occasional applications of limited amounts of lime on sandy loam soils near Almond, Wisconsin. To the best of our knowledge and belief, no field has ever recorded a failure in this locality that was carefully treated with a fair quantity of limestone (two to four and one-half tons per acre) and the alfalfa seed properly inoculated and sowed *alone* or with a *very light* grain crop, so that the moisture was not all sapped out of the soil and the alfalfa left high and dry to the mercy of the heat and drought of summer.

"The scarcity of hay in this section has made the alfalfa yield valuable. No average crop compares with it. Careful business records on one field of nearly ten acres for the last six years reveal an average net yearly income of 10 per cent on a $100 per acre valuation and the fertility of the soil was rather bettered than made poorer in the meantime. These results far exceed those from other crops in this locality.

"The average yearly yield for two or three cuttings on a medium sandy loam soil in this district may conservatively be set at from two to four tons. We prefer to take two cuttings per season and to let a good fall growth stand for winter protection.

"All this is respectfully submitted by one who has advantageously helped to apply thirteen cars of limestone to a medium sized farm near Almond, Wisconsin, during the past twelve years and with due and proper reference to Mr. Harlow A. Frost and to Mr. O. A. Crowell, farmer, business man and banker of Almond, Wisconsin, who have practiced and experienced accordingly and likewise."



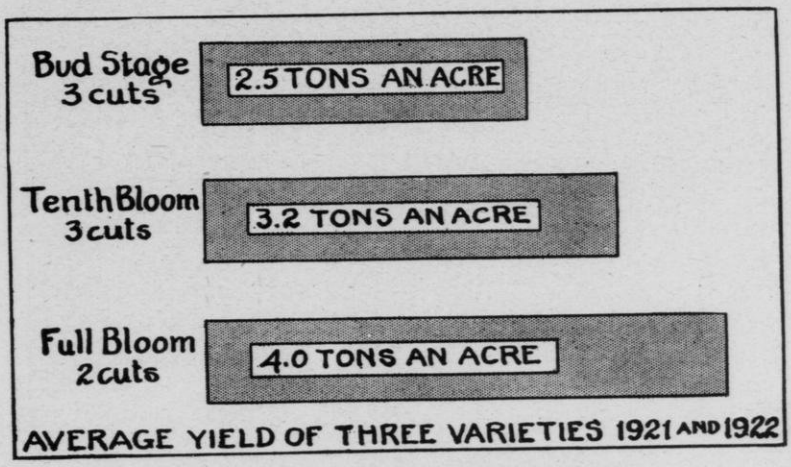
Harvesting Alfalfa Seed in Wisconsin

Several growers in the eastern part of the state have grown alfalfa seed very successfully. In one county alone over a thousand bushels of seed were grown in 1921. The second crop generally is taken for seed and if the dry weather occurs during the blossoming period yields of from two to four bushels an acre have been obtained. If the alfalfa blooms sparsely and heavy rains occur it is best to cut the crop for hay. Fortunately where drought prevents a big crop of hay, seed production is generally at its best. The seed crop is handled and hulled exactly like red clover. Where hardy strains of alfalfa are grown the production and use of home-grown seed will tend to reduce winterkilling losses. In the above photo Peter and Jayson Swartz are seen cutting the second crop of a thirty-acre field of Grimm alfalfa on the Cornfalfa Farms at Waukesha, Wisconsin, for seed. Seed growing, especially of the hardy varieties, is proving profitable. Dry weather which cuts down yields of hay generally favors seed production.

Cutting Trials Show Surprising Results

WHAT WOULD happen if you cut alfalfa four times whenever it reached a height of six or eight inches? This treatment so weakens the plants that they will scarcely grow and weeds will over-run your field. Frequent and early cutting kills alfalfa.

In a trial conducted in the summer of 1922, four crops taken at a very early stage of growth from a vigorous plot only gave a total yield of 1.1 tons an acre and the alfalfa was badly thinned out and over-run with weeds. Joining this plot two crops were cut in the full bloom stage and gave a total yield of 4.3 tons an acre, and the fall growth was healthy, tall and vigorous.



TWO CROPS YIELD MORE THAN THREE

Early cutting weakens alfalfa, increases winterkilling and weeds and lowers the yields.

Two Crops Yield More Than Three

The weakening effect of frequent and early cutting on alfalfa will probably explain why it is that we have obtained, in trials conducted for two years, more hay from two crops cut in the full bloom stage than we did from three crops taken in the tenth bloom or bud stages. These tests were made with Grimm, Turkestan and Common alfalfa.

The average yield for two years of two crops in the full bloom stage was 4.0 tons an acre, for the tenth bloom stage 3.2 tons, and for the bud stage 2.5 tons. These differences are due partly to the greater amount of winterkilling in the bud stages and also to the weakening effect of early cutting.

Two Crop System Fits Wisconsin Farming Better

Two of the great objections which have long been urged against the growth of alfalfa have been the competition which the harvesting

Do You Know?

THAT cutting alfalfa at early stages weakens the next growth?

That delay in cutting alfalfa does not hurt the next growth even if many of the newly formed crown shoots or sprouts are clipped off?

Why the second crop, of otherwise healthy alfalfa, often turns yellow?

That two crops of alfalfa may yield more, in a season, than three cuttings?

Can You Tell?

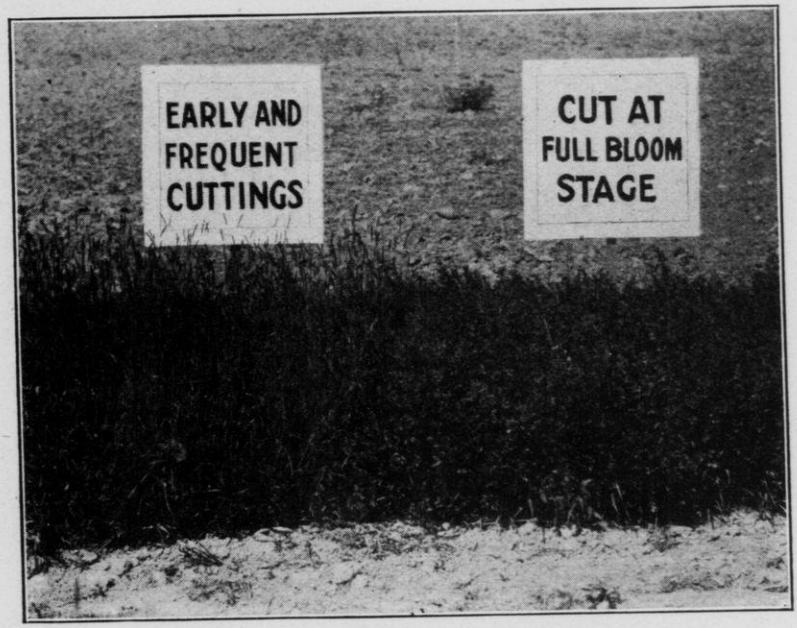
HOW to thicken up a new seeding of alfalfa that is partially winterkilled?

How to prevent winterkilling losses?

Why so much alfalfa was killed out in 1922 while the open winter of the year previous (1920-21) was not injurious?

What part of the alfalfa plant kills first and why many fields that looked promising in the early spring of 1922 seemed to dry up and disappear with the advent of warm weather?

of the first crop early in June occasions with the early cultivation of the corn crop, during this critical period. It has also been claimed, with much justice, that the cutting of the crop early in June has caused great difficulties in the curing process on account of the abundant rains and the natural succulence of the hay. Cutting alfalfa in the full bloom stage overcomes these difficulties. It delays the alfalfa



EARLY CUTTING WEAKENS ALFALFA, REDUCES STAND, INCREASES WEEDS, AND LOWERS YIELDS

The weedy area was a perfect stand of alfalfa, cut whenever it reached a height of from 4 to 8 inches. Three and four cuttings yearly exhausted the root reserves and permitted heavy weed encroachments. The alfalfa cut in the full bloom stage maintained a weed-free healthy growth and yielded in two cuttings 4.3 tons of hay an acre compared with a total of only 1.1 tons for the four very early cuttings.

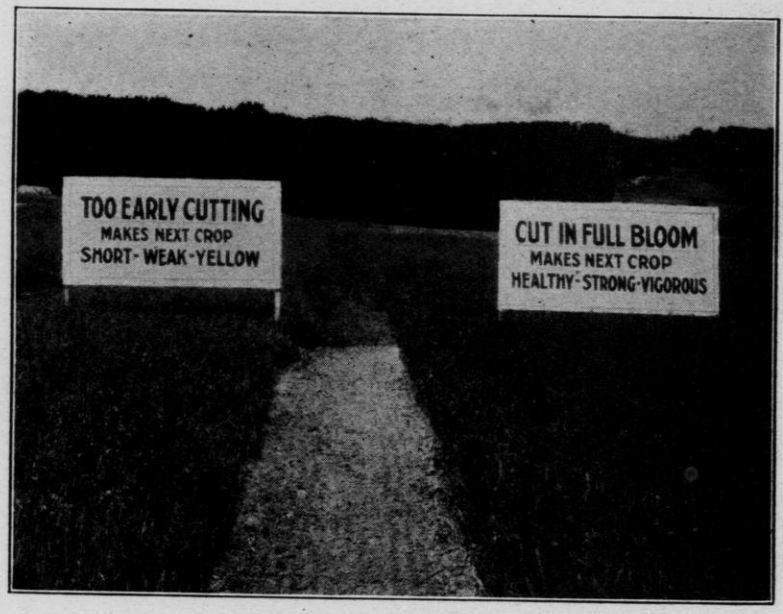
harvest until about the last week in June at which time the weather is very often more propitious and the hay more easily cured.

It is true that alfalfa hay cut in the full bloom stage is of a coarser quality than obtained with earlier cuttings and where soils produce an exceedingly rank growth of alfalfa and lodging occurs, it may be necessary to cut the first crop somewhat earlier in order to secure good hay. But because the succeeding growths are usually much finer, they can often be cut in the full bloom stage. The first crop of one-year-old seedings of alfalfa is often very fine stemmed and can be cut at the full bloom stage without serious reduction in the quality of the hay and with considerable increase in the yields of the following cuttings. It is believed that where the alfalfa growth is very

luxuriant on account of exceptionally favorable soil and climatic conditions; the plant does not appear so sensitive to early cutting as previously indicated. Generally speaking alfalfa should be cut as near the full bloom stage as possible without getting the hay too coarse.

Why Early Cutting Hurts Alfalfa

When alfalfa makes its first eight or ten inches of growth, it draws out of the roots a large amount of material which we call "reserve"



CUTTING FIRST CROP EARLY CAUSES "YELLOWING" OF SECOND GROWTH

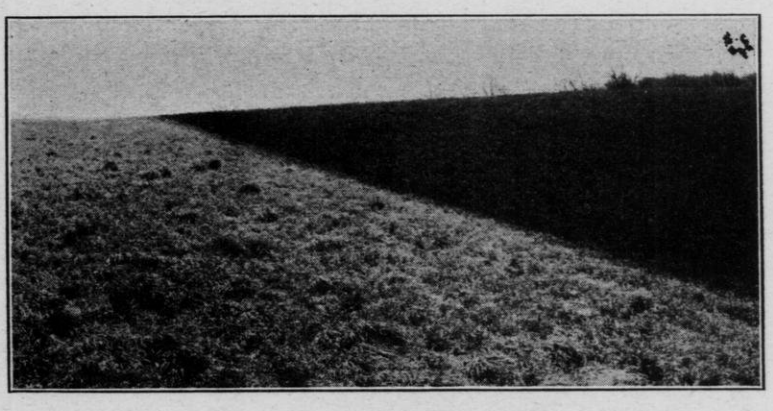
Especially with new seedings and following hard winters alfalfa is sensitive to early cutting treatments. The later cut hay may be somewhat inferior in quality but to maintain yields, health, vigor, freedom from weeds, and permanence of stand require later cutting treatment than has been previously recognized. The yields of weed-free hay for the second crop here shown were reduced 50 per cent on account of early cutting.

that has been stored there by the plant in its previous growth. After blossoming begins, the plant seems to put back into the root the same kind of reserve material which it has taken out in its early growth. If the top growth is cut frequently at an early stage, there is no chance for replacement. The root reserve becomes exhausted and the plant is either killed or seriously weakened. On the other hand, if the alfalfa plant is allowed to reach the full blossom period, the root reserve is largely replenished and the next growth will be healthy, strong and vigorous. Alfalfa cut to maintain the proper food reserves

in its roots appears much hardier and far more resistant to winterkilling than is otherwise true.

Is Clipping New Crown Sprouts Injurious?

For many years the warning has been sounded that it is dangerous to cut alfalfa at such a late date as to clip off the new sprouts which develop from the crown and produce the next crop. In the two past years alfalfa plots were cut in the seed pod stage twice annually. At this time the crown sprouts varied in height all the way from one to eight inches. These plots were cut close to the ground with the mower so as to clip off all the shoots which had reached a height of two inches or more. Instead of injury, as was once supposed, we find that these plots are among the best which we have in stand and



LATE FALL CUTTING AND PASTURING CAUSE WINTERKILLING AND BLUE GRASS TROUBLES

The left part of this field which is so badly winterkilled and overrun with blue grass was cut the previous fall on October 12. The alfalfa on the right was cut on August 30, the previous year, and came through the winter uninjured. In the northern states cutting or heavy pasturing after the first week in September is poor practice.

freedom of weeds. In fact the clipping of these crown shoots does not appear to be of any damage, whatsoever. The reason the plots are so excellent in stand, we feel, has been due to the late cutting which has permitted the plants to store a large amount of food material in the roots which always makes for a good, strong, healthy growth. This would indicate that taking the second crop for seed strengthens alfalfa instead of causing any winter injury. A field of Grimm alfalfa up in Minnesota is now ten years old and every year the first crop has been cut for hay and the second for seed. The field is still a good, thick, vigorous stand.

2400 Farmers Visit Station Farm

THE SUMMER demonstration of 1922 at the University Farm was attended by 2,400 farmers. The results of trials on alfalfa showed conclusively how winterkilling losses may be reduced to a minimum. Briefly, the striking results demonstrated at this time were:

Grimm and other hardy varieties are not entirely winterproof.

Eight-year-old Grimm alfalfa cut three times in 1921 winterkilled seriously while adjacent two-year-old plots of Grimm with the same cutting treatment came through the winter without serious injury. Old alfalfa was more susceptible to winter injury than the younger seedings.

New seedings of the hardy varieties of alfalfa such as the Grimm and Cossack withstood for the most part the severe winter of 1921-22, while adjacent strains of new common winterkilled very seriously.

Two-year-old common alfalfa cut twice the preceding year did not winterkill seriously while the same strain cut three times winterkilled almost completely.

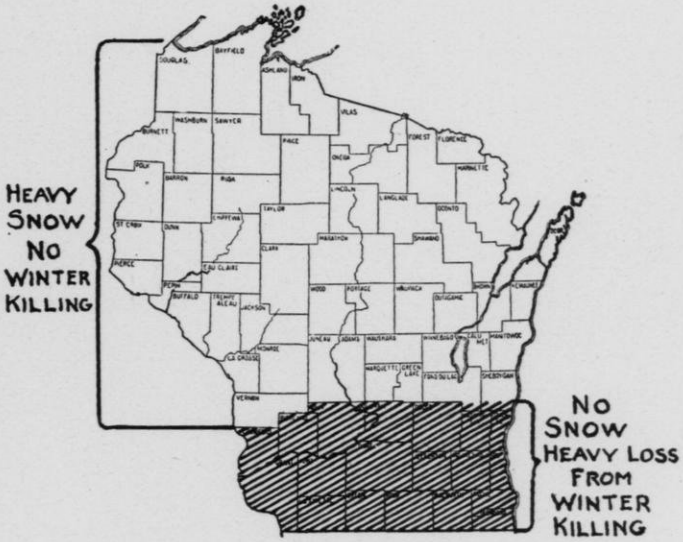
Two-year-old Grimm cut three times in 1921 survived the hard winter which followed while adjacent plots of common cut at the same time and with the same frequency killed out almost completely.

Briefly the 2,400 farmers who visited the Experiment Station could see plainly that the avoidance of late fall cutting, the use of hardy strains of seed and also the use of alfalfa in the rotation so that new seedings would be established every one or more years were the ways to minimize winterkilling losses.

Lessons From Winterkilling Losses

SOME 40,000 acres of Wisconsin alfalfa were winterkilled in the southern three tiers of counties in 1922. North of these counties a heavy blanket of snow prevented practically all damage from the weather. It has often been asked just why winter losses did not occur in southern Wisconsin, the year previous which was also an open winter with very little snow for protection. An analysis of the weather bureau records at Madison reveals the following facts:

From October to April, 1920-21, there were only four days of below zero weather while for the same period in 1921-22 there were fifteen.



WHERE WINTERKILLING WAS MOST SERIOUS, 1922

On February 21 and 22, 1922, a rainfall of 3.18 inches occurred which was followed by temperatures below freezing ranging from 18°F. to 28°F. This resulted in a heavy ice sheet which brought injury to many fields. Ice sheets were not in evidence to any noticeable extent the previous winter.

The rainfall for the fall months of September, October and November was 13.3 inches for 1921 and 4.8 inches for 1920. A water-soaked soil is more likely to cause winter injury than soils comparatively dry. An excess of soil moisture increases the intensity of injury from alternate freezing and thawing.

Late fall growing weather preceded both the winters under comparison but the abundance of autumn rain in 1921 resulted in a heavy succulent fall growth which, with some varieties, did not permit of the development of a protective state of dormancy.

THE WILLING HORSE—DON'T RIDE HIM TO DEATH AVOID LATE FALL CUTTING

The favorable fall growing weather of 1921 resulted in a great deal of cutting late in September and many a fourth crop of alfalfa was removed early in October. This practice makes alfalfa very susceptible to winter injury.

All these factors contributed to heavy winterkilling losses in 1922, while in 1921, when the ground was also largely devoid of snow, there was little or no winter injury.

Remedies for Winterkilling

While there is no absolute way of entirely preventing winterkilling losses, there are many things which will largely eliminate this difficulty with alfalfa.

Avoid late fall cutting and pasturing.

THE DIFFERENCE IN SOME VARIETIES OF ALFALFA

While Grimm alfalfa is by no means winterproof it lived through on this farm while common killed badly in 1922.

Take only two crops and cut as near the full bloom stage as possible without getting the hay too coarse. Cutting at earlier stages weakens alfalfa.

Seed alfalfa on sloping soil where there is the least opportunity for water from rain or melting snow to accumulate and result in the formation of smothering ice sheets.

If your soil conditions are favorable for alfalfa, you can put this crop in a rotation so that new seedings will be established every year or so. Remember new seedings of any variety of alfalfa are much hardier than old seedings.

Use hardy seeds. Grimm is one of the hardiest varieties of alfalfa. It is not entirely winterproof but is generally much hardier than the

average western common, especially that coming from the southwestern states, and is far hardier than either red or alsike clover. Where winterkilling has not been serious, good common alfalfa seed such as produced in the Dakotas or Montana may be satisfactory especially where permanence is not particularly desired. Kansas and Idaho common seed, while slightly less hardy in our trials, has given good satisfaction where winterkilling has not been very pronounced.

Compare Value of Western Strains of Alfalfa

Alfalfa seed from 120 growers which was sown five years ago in two series of 166 plots at Madison and Waukesha, has given results

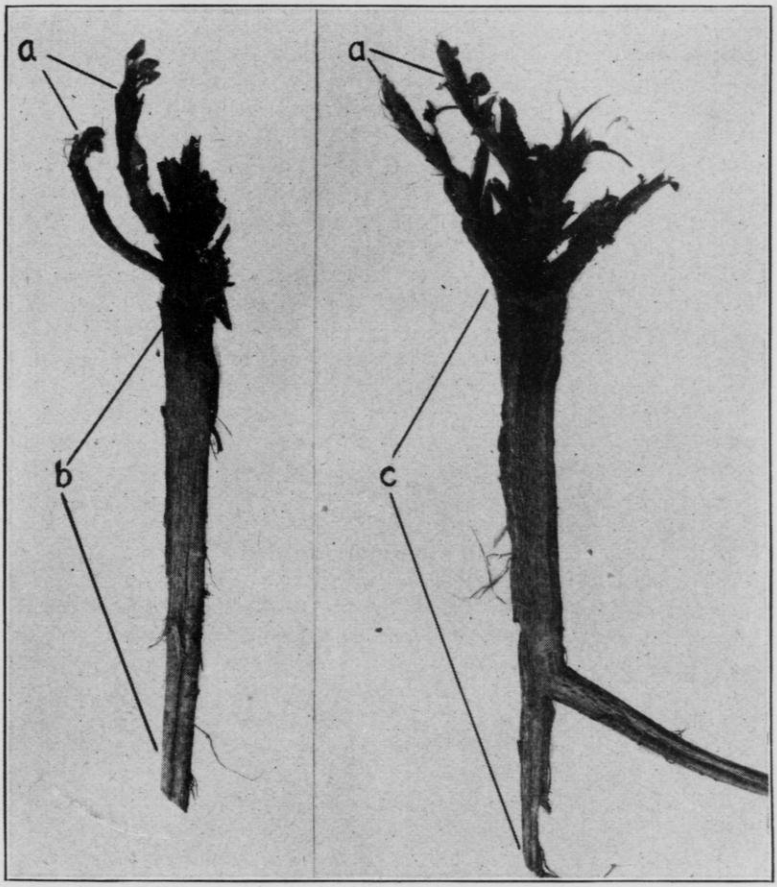
NEW SEEDINGS OF ALFALFA AVOID WINTERKILLING LOSSES

A good stand of four-year-old Grimm winterkilled because of late cutting and the severe winter of 1921-22. A heavy growth of timothy and blue grass followed. Adjacent was a new seeding of Grimm which came through the winter with practically no injury. New seedings of alfalfa are much hardier than old. The inclusion of alfalfa in a regular rotation so that some new seedings will be established every one or two years reduces winterkilling losses.

fairly indicative of the relative value of the various regional strains of common western alfalfa seed and Grimm for Wisconsin conditions.

Seed from South Dakota and Montana growers has held the lead in the common strains, in hardiness and permanence of good stands. Kansas and Idaho ranked a rather close third and fourth. New Mexico and Arizona grown strains proved very susceptible to winter injury, which resulted in a high percentage of poor stands and blue grass infestation the first year after seeding.

Grimm manifested its superiority, more particularly in 1922 when 71 per cent of these five-year-old plots were in good condition as compared with an average of 4 per cent for the common plots seeded with seed from South Dakota, Montana, Kansas and Idaho.



ALFALFA SHOOTS ARE HARDIER THAN THE CROWN OR ROOT

In many instances shoots that produced healthy leaves were found to originate from crowns which had completely winterkilled and decayed. As these crowns dried the source of food for the shoots was cut off and they gradually passed away.

(a) Healthy shoots from winterkilled and decayed crown.
(b) Healthy part of root.
(c) Winterkilled and decayed root.

What Part of the Alfalfa Plant Winterkills First?

Many members of the Alfalfa Order reported their old fields of alfalfa to be in splendid condition early in the spring of 1922. The young shoots were green and healthy and from all appearances a big crop was anticipated. For about two weeks, rather cold weather occurred which was later followed by high temperatures which would produce rapid growth. Much to the surprise of many farmers, the alfalfa and clover fields, instead of improving gradually disappeared and what seemed to be a splendid stand faded away in the course of a few days of warm spring weather. An examination was made of 1,601 alfalfa plants which were dug up from our experimental plots that ranged from five to eight years of age. At the time this examination was made, 334 of these plants had healthy, live green crown sprouts and roots which were firm and healthy, but 66 per cent of the crowns of these same plants were partially rotted and 34 per cent were completely decayed and of a very soft character.

In all these instances good healthy living green shoots with healthy leaves could be pulled out of the rotted crown. With this condition in a high percentage of the plants, it is easy to understand that these sprouts, depending upon the crown and root for their sustenance, would keep alive during the cool, damp weather, but when warmth occurred and the dead portion of the crowns dried up, the food supply of the shoots was cut off and they shriveled up and died. This explains why alfalfa which appeared in good condition early in April, 1923, gradually thinned out after warm weather occurred.

These and other results indicate clearly that the buds and shoots on the crowns are far more hardy than either the crown itself or the root of the plant. The crown and the upper portions of the root are the parts of the plant which first suffer from winter injury. An examination of several fields of alsike and red clover indicates that this same condition holds true with these crops.

Thickening a Thinned Stand

New seedings of alfalfa, which have been partly thinned out by winter injury, will spread out and thicken up with surprising rapidity. This is particularly true with such a hardy strain as the Grimm. The difficulty, however, is that during the recuperating process weeds are apt to give the weakened alfalfa a hard rub and reduce the yields and quality of hay. In a case like this, it is a good plan to drill in with the alfalfa one bushel of Kherson (Wis. No. 7) oats per acre and broadcast at the same time about two pounds of alsike and three pounds of timothy an acre. Harrow this in. The drilling and harrowing process will not cause serious injury to the alfalfa.

When this oats is well headed out, cut it, together with the alfalfa for hay. A good sized yield should result with the first crop. If the weather is favorable, the second crop of alfalfa should come forth with considerable vigor and had best be cut in full bloom stage. Do not take a third cutting but give the field a good coating of manure. The next year, timothy and alsike should fill in the bare spots and make a good stand of hay.

Home Grown Lime for Home Grown Alfalfa

THE GRINDING of limestone as fostered by county agents and the Agronomy Department has progressed remarkably. County agents have taken hold of the work with vigor and to date over 30,000 tons of lime rock have been ground locally at a saving in cash to the farmer conservatively estimated at $60,000.

Farmers living four or more miles from railroad stations find it a great service to obtain their lime needs at quarries near the farm. The following counties have assumed leadership in the production of home ground limestone:

Green County	8,000 tons
Rock County	14,000 tons
Iowa County	6,000 tons
Green Lake County	2,400 tons
Walworth County	800 tons

More lime means more alfalfa. Individual ownership or operation or both of the lime grinding machinery has resulted in the production of large tonnages at very reasonable costs.

A Service That Saves

THE PRODUCTION at local quarries of over 30,000 tons of ground limestone for more alfalfa at a saving in cost to farmers in five southwestern Wisconsin counties conservatively estimated at $60,000 is one of the outstanding achievements accomplished largely through county agent activity. Fortunately this service has been rendered at a time when most needed in Wisconsin agriculture. The feed bill of the Wisconsin dairymen is enormous. It riddles farm profits. With proper cultural practices, high protein feeds can be raised on the farm much more cheaply than they can be purchased.

LIMESTONE QUARRY

One of the numerous sources of lime rock for local grinding in Wisconsin.

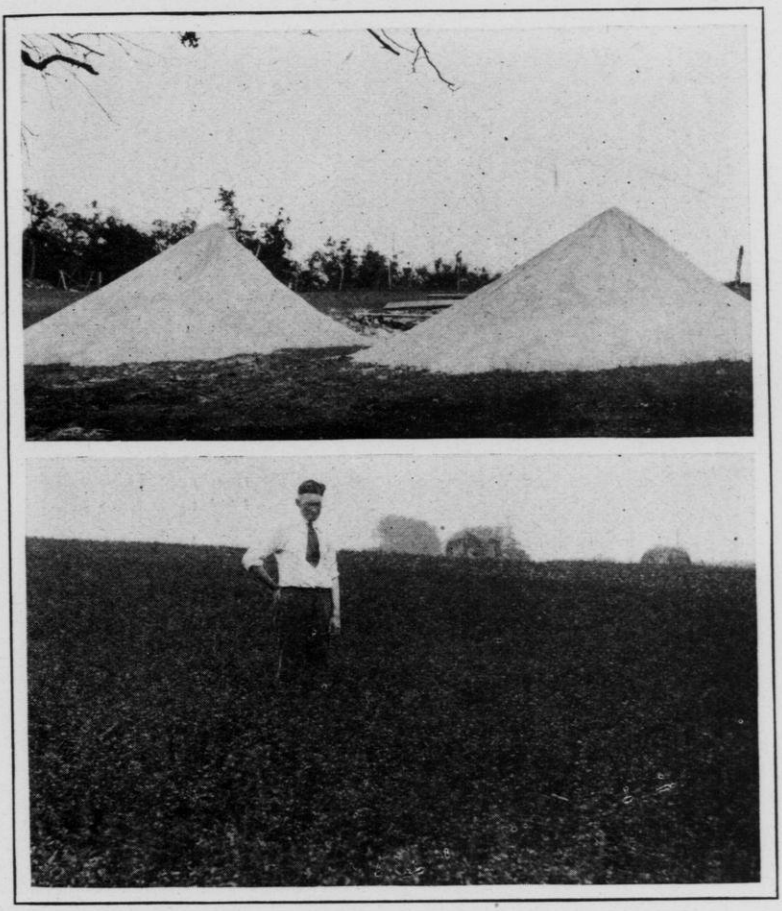
We grow too much timothy and too little alfalfa. We need to put our land in shape to make alfalfa a sure crop.

Lime, a Forerunner of Alfalfa

Success with alfalfa in Wisconsin is largely a matter of the amount of lime in the soil. If the land is sour and decidedly lacking in lime, alfalfa will be a failure unless ground limestone or some other form of lime is applied to remedy this soil deficiency. It is estimated that about two-thirds of the Wisconsin soils are acid. This does not indicate that all acid soils will fail to grow alfalfa, but it does mean that even in some of the limestone regions of Wisconsin many of the fields are so sour that they will not grow alfalfa successfully until generous applications of lime are made.

Long Haul Bars Use of Lime

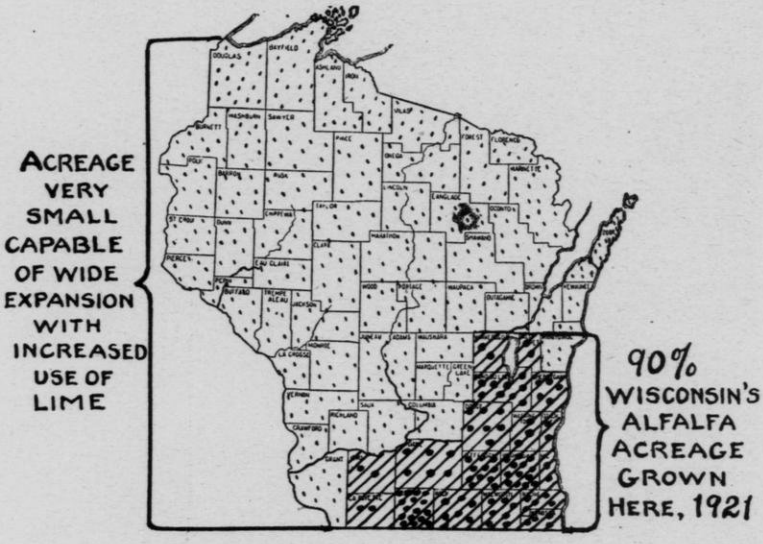
Through demonstration and experience the value of lime has become quite generally appreciated, but to that large group of farmers living



LIME GRINDING PAVES THE WAY FOR GOOD ALFALFA FIELDS

Through the efforts of County Agent Lacey, home ground limestone has made possible the growth of splendid fields of alfalfa in Green Lake county where failure with this crop had previously occurred.

several miles from freight stations, the cost of the liming material and the long haul from station to farm, perhaps over hilly and rough roads, are factors which rightfully make him ponder and wonder "will it pay?" Furthermore, when lime is shipped in, the date of arrival is more or less uncertain; the time for unloading the car is limited, being optional with payment of demurrage and in the event that the lime must be hauled before the field is ready for application, it requires unloading and later rehandling of the product. To elimi-



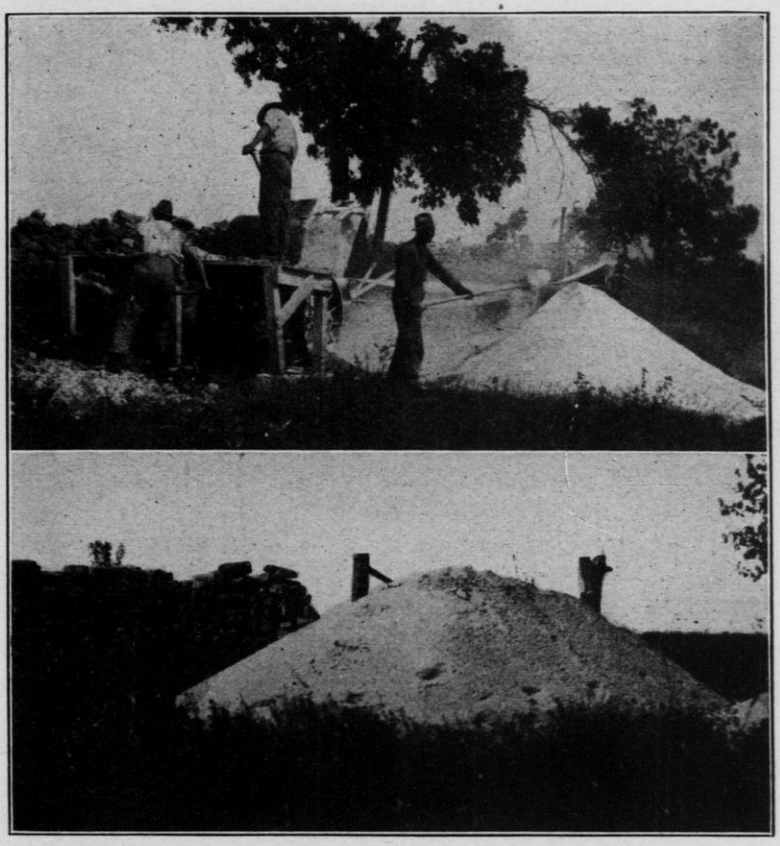
ROOM FOR ALFALFA EXPANSION

nate all these difficulties a plan was intiated through alfalfa demonstration and county agent activity of having lime ground at local quarries with portable lime grinding machines.

Custom Grinding for Quantity Production

While a group of farmers have at times purchased a lime grinding outfit and operated it cooperatively, it has been the experience in the past that farmers were often too busy to grind their own lime and that with community owned grinders, the machines were often idle the greater portion of the year. With these facts in mind a new plan of grinding limestone was begun in Green County, of having the machine owned or operated or both by an individual or individuals who would make lime grinding a business, moving from quarry to quarry and grinding lime at a specified amount per ton.

With this plan a single machine could serve hundreds of farmers and would be kept active the year round. The machine which was first used in Green County has turned out on this basis over 12,000 tons



STONE FENCES TORN DOWN TO BUILD UP SOILS.

Witness the change in agricultural thought. In the pioneer days of our grandfathers' fences of lime rock were built as permanent enclosures for live stock. Today they are being ground to dust and put back on the land to grow alfalfa—a crop that our worthy ancestors knew naught of.

of ground limestone in the past four years. When a lime-grinding outfit is owned by one or two individuals and they make it a business to grind lime, their profits and success depend upon the grinding of a large quantity of limerock, a factor which has in no small measure aided the success of the new plan of lime grinding.

Sometimes a farm organization or a group of farmers will buy a lime-grinding machine and rent it to an operator at a specified royalty for each ton of limerock ground. A group of farmers may occasionally

DEMONSTRATIONS CONVINCE

This demonstration very materially aided the initiation of a lime grinding program in Wisconsin which has resulted in the production of 30,000 tons of limestone at local quarries and lime rock fences.

grind their own lime and instead of investing in a machine, it is sometimes possible for them to rent a grinder which is often a much more economical proposition than the ownership of an outfit.

Have Limerock Tested

Naturally local grinding of limestone is dependent upon the availability of the raw material. In the western and southwestern parts of Wisconsin, limestone quarries are quite numerous and in some places there are miles of old limestone fences built by the pioneers before the days of barbed wire. For the most part all this rock is excellent material for soil use when ground up to a fine state, but it is always a wise and almost necessary precaution to submit before grinding a small representative sample of the stone to the College of Agriculture, Madison, Wisconsin, for a chemical analysis. Limestone testing 90 per cent carbonates or better is considered of excellent

Sour Soil Suggestions

BEFORE SOWING alfalfa, have your county agent test your soil. By using Truog's soil acidity test he can determine the amount of lime needed for success with alfalfa. If you have no county agent, send a half pound sample taken from three or four average places in the surface of the field to the Experiment Station, Madison, Wisconsin, for an acidity test.

Always put ground limestone on the top of plowed land. Lime works down in the soil. From 300 to 500 pounds of lime are apt to leach out of the surface soil every year. Never plow lime under.

It is best to apply lime in the fall; if this is not possible, applications in the winter or spring months are generally satisfactory.

Lime may be applied with a manure spreader or an end gate distributer or a lime sower or may be spread by hand with a shovel.

A good application of lime will last about six years—perhaps longer, but additional applications may often be made with profit.

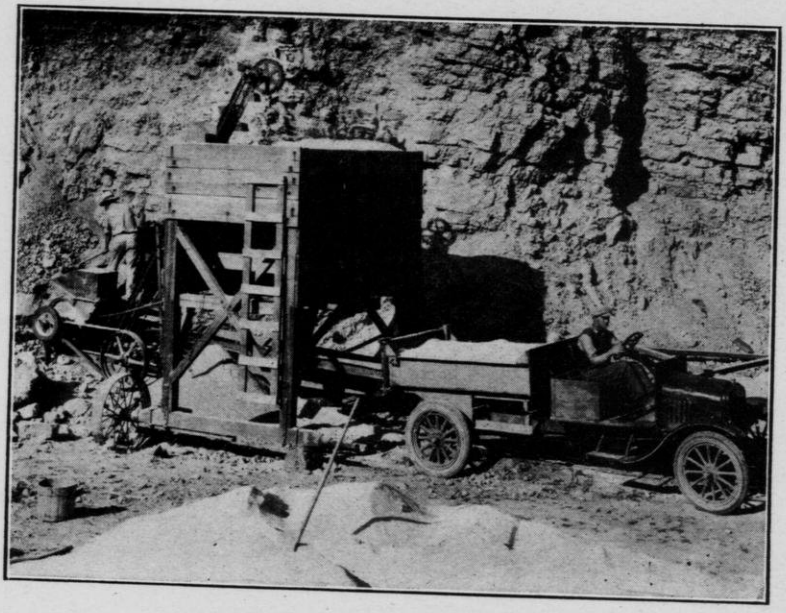
Some soils may need as much as four tons of ground limestone an acre. Other soils may require only two tons. Play safe and have your soil tested.

Fertile soils of limestone origin which show only a need of one or possibly two tons of ground limestone may grow alfalfa fairly well without lime, provided conditions are sufficiently favorable that the roots of the new seeding will grow deep enough to secure supplies of lime out of the sub-soil. If convenient the use of lime, on such soils, pays as it makes a surer stand and a bigger yield with the first crop.

quality for soil improvement, but lower testing rock may be satisfactory if more generous applications of the ground product are made to the soil.

Practical Points on Lime Grinding

No attempt will be made to discuss the mechanical features of lime grinding. Needless to say the lime grinder must understand machinery, must know how to operate a tractor and must be a good manager to operate his outfit economically and profitably. A lime grinding machine consisting of a crusher and a pulverizer combined will cost all



A NEW IDEA ON LIMESTONE GRINDING

Grinding, loading and delivering limestone f. o. b. farm. Through the work of county agents, Baumeister and Harrington, of Stephenson county, Illinois, over 3,000 tons of limestone have been ground at local quarries and delivered to the farm. The lime rock is elevated from the grinder into a small bin from whence it is dropped into auto trucks by gravity and delivered to the farm.

the way from eight hundred to fifteen hundred dollars. Generally a machine is secured which will have a capacity of twenty or thirty tons per day. It will require about four men to operate such a machine, including the quarrying of the rock. A 15-30 gas tractor will usually furnish ample power. The farmers usually sign a contract with the lime grinder to grind for them at a certain quarry the amount of ground limestone which they desire to use at a specified amount per ton. In the past this has been around two dollars per ton, although the price varies widely with conditions.

In some quarries the lime rock is hard and very difficult to quarry and expensive to grind. In other places the limestone rock may be a

very soft grade and can be quarried and ground at a relatively low figure. A lime grinder will move his outfit from one quarry to another, but generally prefers to grind not less than two hundred tons at a "setting." Frequently the farmer owning the quarry will furnish the limerock free for his neighbors, but sometimes a small charge of ten cents a ton is made, which, of course, is added to the cost of the lime to those farmers contracting for this product.

Sometimes lime grinders will make a reduction in price provided the farmer is in a position to haul the lime away as rapidly as it is ground. Where several farmers have ordered limestone at one quarry,

IT TELLS HOW MUCH LIME THE SOIL NEEDS

Find out how your soil tests before sowing alfalfa. Your county agent will do this for you with the Truog Test shown above or you can send a half pound sample taken from five or six average places in the field to the College of Agriculture, Madison, Wis., and they will determine its lime requirements for you.

the plan usually followed is to put the lime out in separate piles or specially constructed bins for each farmer. This involves an additional cost to the lime grinder of wheeling the product from the grinding machine to each farmer's particular place of storage. When the lime is hauled direct from the machine this work is eliminated.

County Agents Pave Way for Lime Grinders

Lime grinders have met with the greatest success in those counties having county agents. The county agent assumes leadership in the improvement of agriculture. He tests the soil for acidity to learn its lime requirements, he demonstrates the value of lime, and creates a desire and demand for lime on the farm where needed. In this way he paves the way for the lime grinder to supply the needs, especially of those farmers living at such distances from railroad stations that make the use of "shipped in" limestone very expensive.

In some cases where parties have started in the lime grinding business, they have misjudged the demand for lime and after investing a considerable sum in a grinding machine and a tractor, they have been

disappointed in finding that the demand for limestone did not justify their investment. For this reason it is very important from the lime grinder's standpoint to know the needs and demands of the territory in which he expects to operate. Here the county agent's services may be especially valuable both for the farmers and the lime grinder. By testing the soil the county agent will know its lime needs and will be guided accordingly. The county agent can also be of service in locating the quarries having the highest testing limestone.

Lime Grinding Increases Rural Wealth

While grinding at local quarries has effected a tremendous saving to the farmers in the cost of liming material this economy is but a small proportion of the benefit from the use of this home ground limestone. Alfalfa growers are getting one ton of hay more per acre than are the growers of clover and timothy. This additional ton of hay is at least worth twenty dollars. The use of ground limestone has made and will make possible thousands of additional acres of alfalfa or, in other words, thousands of additional tons of rich feeding hay with a market value of twenty or more dollars a ton. Lime benefits not only alfalfa but helps clover, corn, barley, and other crops. It is one of the fundamental steps in increasing soil fertility, for increasing crop yields, and for increasing rural wealth and prosperity.

Six Sandy Soil Suggestions

1. Lime is the first essential.

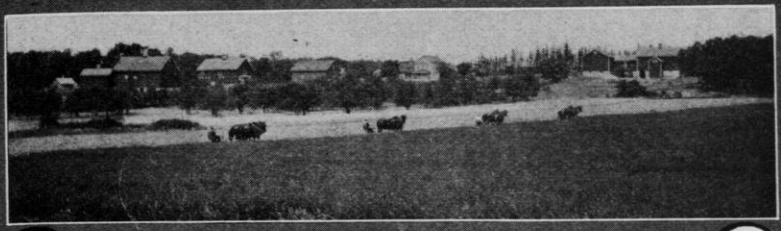
2. Inoculate for better yields.

3. Apply manure or commercial fertilizer or both.

4. Roll with a corrugated roller just before and after sowing.

5. Seed with a light sowing of early ripening spring grain which should be cut for hay just as soon as it is headed out.

6. Or, seed alone in the latter part of May on land which has been previously cultivated frequently at weekly intervals to free the soil of weeds and to save up soil moisture.



Dairying is our leading industry. Wisconsin produces nearly three-fourths the nation's cheese and leads in the production of butter and condensed milk. But with all its great strides in dairying the production of home grown feeds for its cattle has lagged in the procession.

There has never been a time since Wisconsin has become a leading livestock state when farmers have been able to produce enough feed of the right kind for their livestock. Every year hundreds of thousands of dollars are paid out for bran, cotton seed meal, hay and other feeds. This expense would be largely reduced by growing more alfalfa and clover.

The time has come to eliminate the heavy drain of the feed bill on farm profits and to put more energy into liming, inoculation and other essential cultural practices. With them we grow the crops that work hardest for us—that produce the most for us—that give us the greatest returns in satisfaction, in soil enrichment and in dollars and cents. Not among the least of these is alfalfa.

A County Plan of Grinding Limestone

(Taken from article in Hoard's Dairyman)

THAT one lime demonstration on the County Farm of Green County should have paved the way for the use of 30,000 tons of ground limestone in five Wisconsin counties for growing more alfalfa, is one of the top records of county agent achievement. The development of this work is a most interesting story which illustrates the old maxim that "great oaks from little acorns grow." Down in Green County, Wisconsin, in 1918, County Agent James Lacey secured three acres of land on the County Farm to demonstrate that alfalfa could

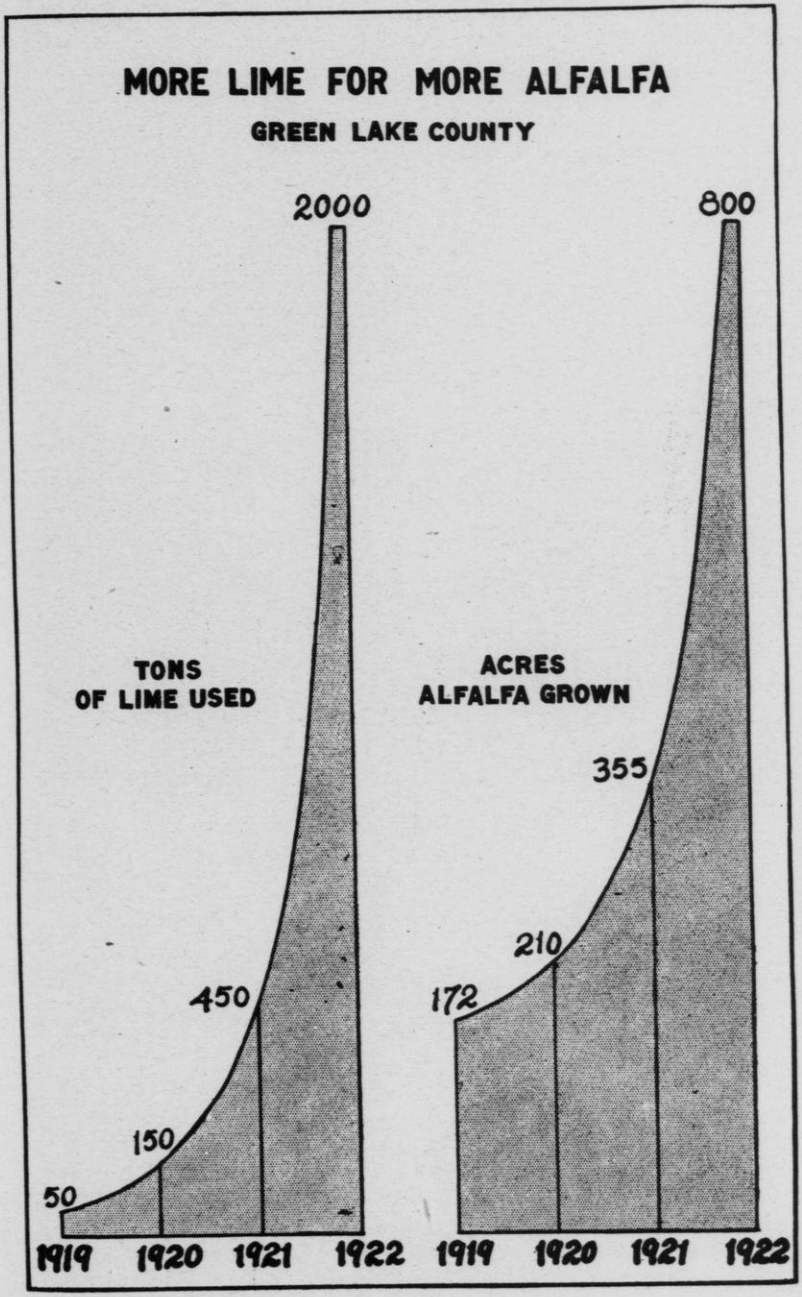
FIELD MEETINGS BRING MORE ALFALFA FIELDS

Demonstrations like this have paved the way for a greater prosperity by showing the necessity of lime and other cultural treatments to make alfalfa a success.

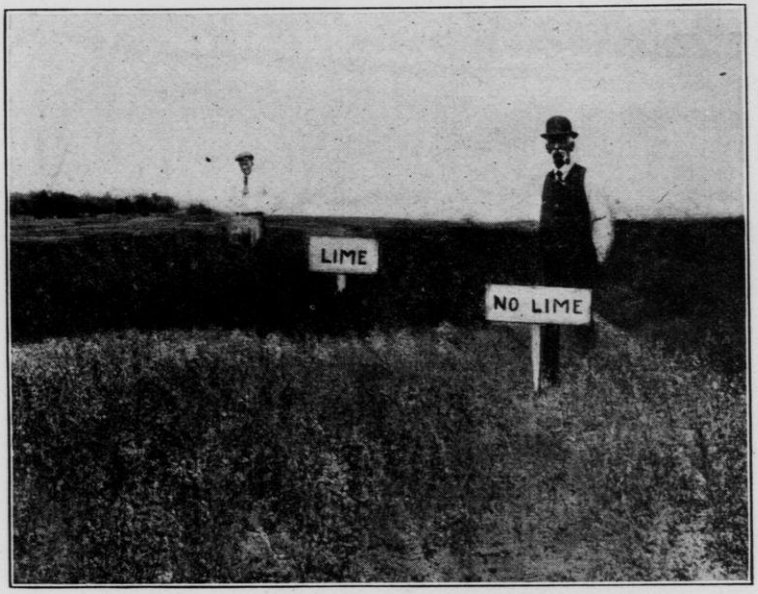
be grown where it had long been a dismal failure and where little hope or faith was entertained that it could ever succeed. This soil was strongly sour. According to Truog's test it showed a lime requirement of four to five tons an acre. Five tons an acre of ground limestone were applied to the surface of the plowed land in the spring of 1918 except for a thirty-foot strip through the center of the field which received no lime. The alfalfa (several varieties) was seeded with one bushel of barley an acre and in the latter part of June this grain was cut for hay.

Seeing is Believing

The winter was very favorable and the alfalfa came through unscathed except for a few plots which had been seeded with southern New Mexico and Arizona grown seed, which practically winter-killed


MORE LIME FOR MORE ALFALFA
GREEN LAKE COUNTY
TONS
OF LIME USED
50
150
450
2000
1919
1920
1921
1922
ACRES
ALFALFA GROWN
172
210
355
800
1919
1920
1921
1922

in toto. Aside from all this, the alfalfa came forth with splendid vigor and enthusiasm until the latter part of May when the "no lime" alfalfa began to get sick. It started yellowing, stopped growing—weeds came in—and by the middle of June it was a ragged looking sight alongside of the rich, healthy, dark green limed alfalfa on either side. Lime made the difference. Seventy-five Green County farmers saw this and sure as all the world—"seeing is believing."



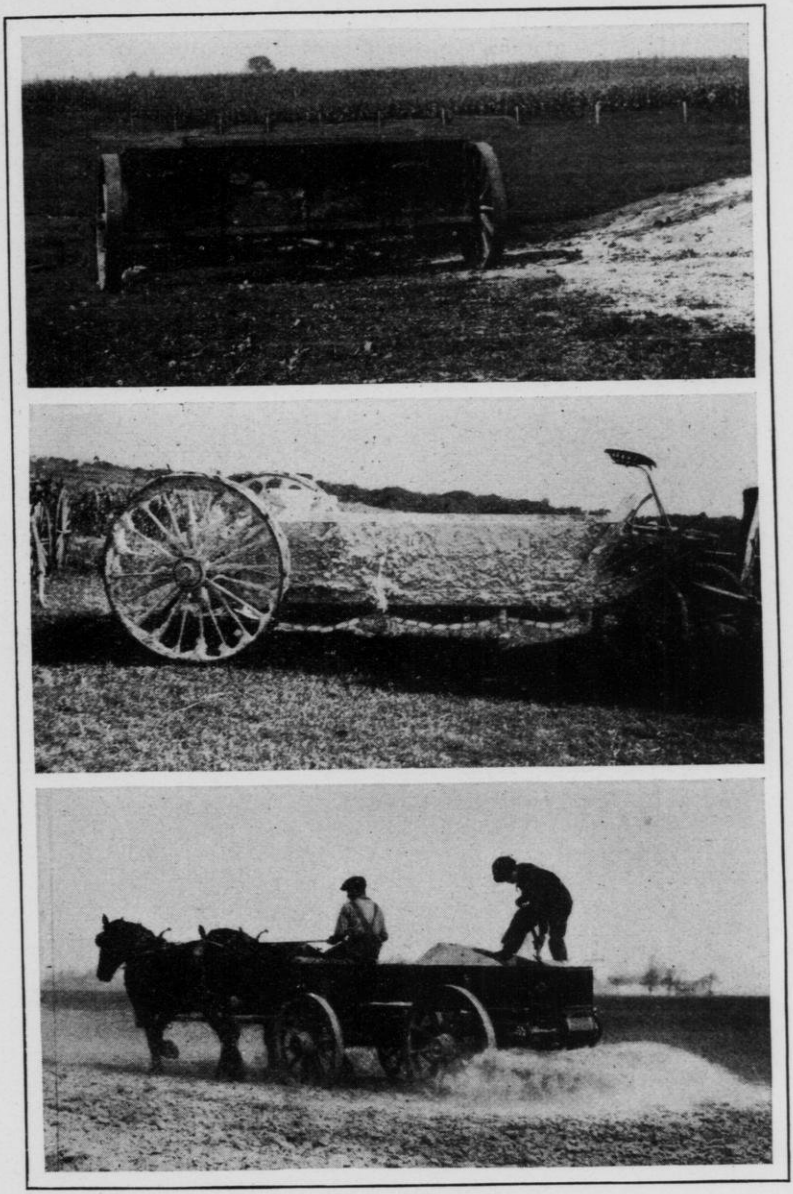
LIME MADE THE DIFFERENCE

This picture speaks for itself. Where no lime was applied the alfalfa growth is weak and scanty. On the other field where lime was used it is "hip high."

Right then and there the use of home ground limestone was given an impetus and a push that has spread its beneficence and value into several counties of the state.

Green County Plan of Local Lime Grinding

County Agent Lacey knew well the lime needs of Green County soils. He had tested over 300 soil samples, two-thirds of which were sour. He further knew that most of the farmers lived three to seven miles from a freight station so that the long haul over hilly roads of "shipped in" limestone was a preventive barrier in his lime program. It so happened that there was an idle lime grinding outfit in the county which had only been slightly used and which was well equipped. Through the assistance of Arthur Preston, one of Green County's most prominent farmers, Lacey was able to interest a Mr.



THREE KINDS OF DISTRIBUTORS

Aside from the box type of lime distributors, as shown in the upper photo, (those with double agitators preferred) the manure spreader may be used and the endgate distributor, as shown below, is giving good satisfaction. Ground limestone is also spread with a shovel.

Douglas to start grinding limestone as a regular business by having him buy the lime grinder and begin operation in a section where the demand for limestone was keenest. "I firmly believe in cooperation," said Lacey in answer to an inquiry as to why he preferred individual ownership of the lime grinder rather than to have the machine owned and operated cooperatively by several farmers, "but under the circumstances here in Green County I believe that we can do the whole county the most good by having the machine owned and operated by one party who will go into the business and on whom will rest the whole responsibility for its successful operation. There is one thing sure, no man can grind lime profitably and at a reasonable price unless he grinds large quantities of it and keeps his outfit going every day the weather permits."

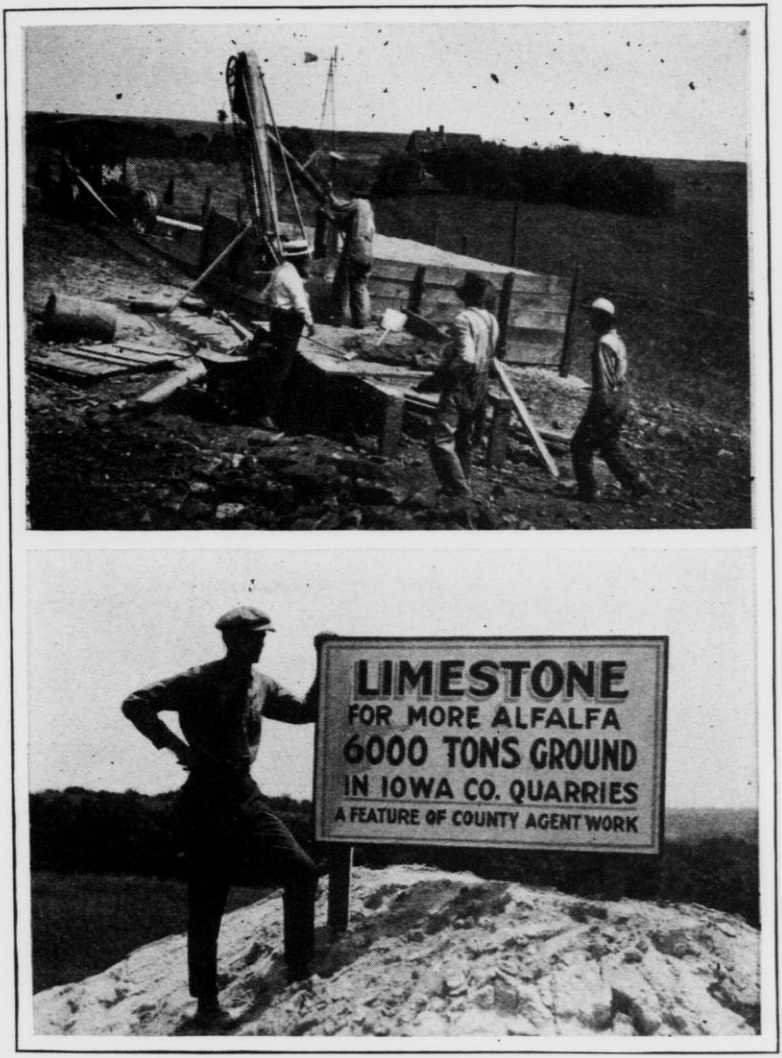
And so Lacey went ahead and pushed his lime grinding program on the basis of the Green County plan, and he surely gave it a good push. He left Green County shortly afterwards as a result of war fever, and joined the army; but the lime grinding work went on. In three years Douglas ground about 8,000 tons of limestone at a cost averaging less than $2.00 a ton. He moved from quarry to quarry to eliminate long costly hauls. He was careful in selecting his quarries. He cooperated with the State Soils Laboratory in having the limestone from each quarry tested so as to grind only the high testing rock. He saved the farmers no less than $16,000 on the cost of their lime if the long haul and inconvenience of handling shipped in limestone is taken into consideration. But far more than all this, he has made possible the growth of between 4,000 and 5,000 acres of additional alfalfa where perhaps less profitable crops grew before.

A Typical Example of the Service Rendered

J. Carl Penn is well known in Green County. Years ago he was county superintendent of schools but resigned to take up farming. Today he owns and operates one of the best dairy farms in Green County and his herd of pure-bred Holsteins is hard to excel.

For years he has seen the need and value of alfalfa for his cows and for his land, but he had never grown it successfully, at least to his own satisfaction, except on a few limestone knoll outcroppings where it grew "like a weed." In spite of all this, according to his own admission, he had never fully appreciated the value and wisdom of liming until he witnessed the alfalfa-lime demonstration on the Green County farm. "It was that demonstration which sold the ground limestone to me," he said with his usual enthusiasm. "I appreciated the value of liming land—I knew in a way it was a good thing but I was never really sold on it until I saw your demonstration. Since then I have had 200 tons ground right here on the farm and the results with my alfalfa are more than gratifying. It has been one of the most profitable, long-time investments I have ever made and right now I am hoping to get 150 tons more ground for use next year."

Mr. Penn led me to a twenty-acre field that was one of the finest and most uniform stands and growth of alfalfa I had ever gazed on.



LIME GRINDING SAVES $12,000

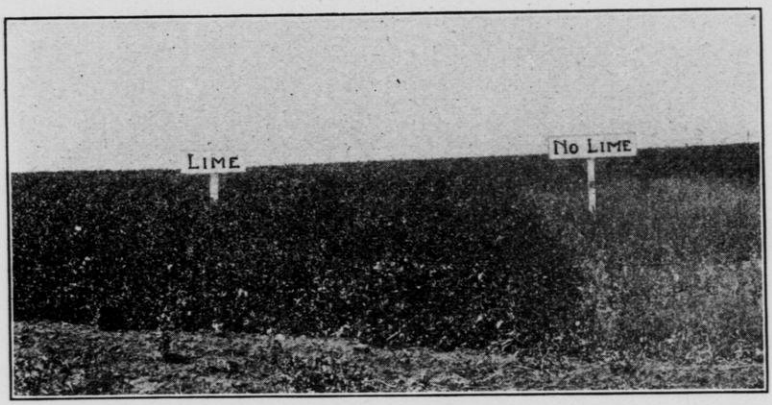
During the past two years 6,000 tons of limestone have been ground at a saving of $12,000 in Iowa county where County Agent H. R. Noble (lower view) initiated this great work. The upper view shows Conrad Holt's lime grinding crew and outfit in operation over near Hollandale, Wisconsin. Noble rendered a great service to the farmers of Iowa county in helping them to grow more and better feeds on the farm.

"This field which I acquired four years ago has a most interesting history. For 65 years it was rented and farmed, with everything hauled off and not a return of one load of manure made. When I got it I seeded it to oats, clover, and timothy. The oats was not worth cutting and the clover failed although some timothy grew. I pastured it for a year, fall plowed it, and put on six tons of my home ground limestone and 20 tons of manure per acre. The following year I got one of the biggest crops of corn in the neighborhood. I seeded alfalfa this spring and here is the result." It was a marvelous stand of alfalfa with splendid vigor in spite of summer's heat and drought.

"I live four miles from the railroad station," continued Mr. Penn. "The roads are good, but hilly. Hauling out lime would be a mighty burden. In fact I doubt if I would have used lime were it not for the possibility of having it ground right here on the farm. While the saving in cost of my limestone laid down on the field will result in at least $500 as a result of this limestone campaign, the future benefits in the way of increased production, especially of alfalfa hay, makes this appear insignificant."

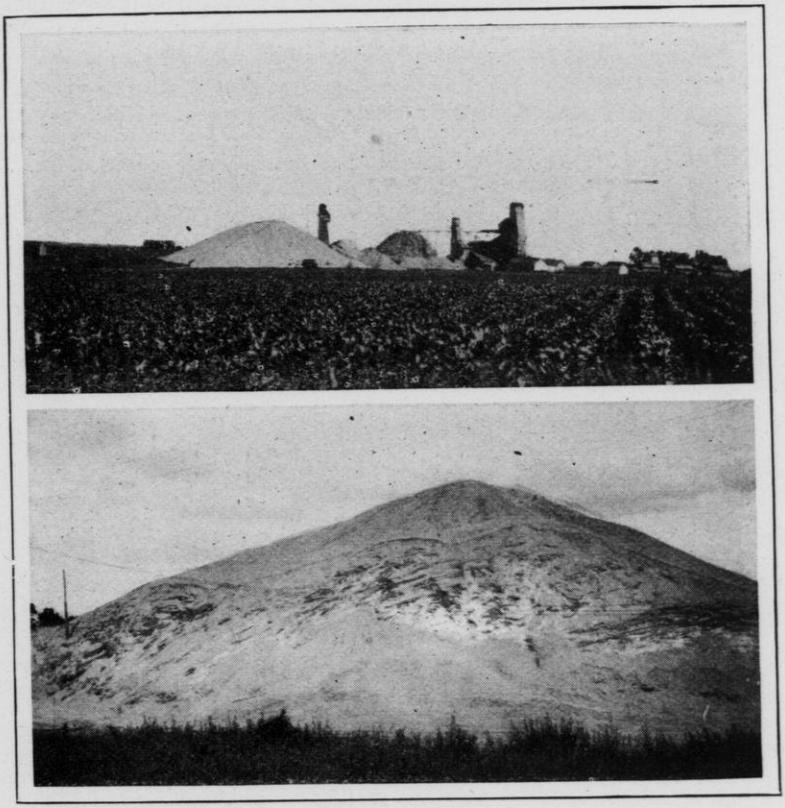
"But," I asked, "is it not true, Mr. Penn, that more alfalfa means more work?"

"It sure does," was the quick reply, "but it is the kind of work we like, Mr. Graber."



SUCCESS VS. FAILURE

This field would produce in average years 75 bushels of corn an acre, but it was too sour to grow alfalfa, until lime was applied. The presence of weeds and the yellow color and sickly growth of the alfalfa on the unlimed corner was visible for a distance of one-half mile.



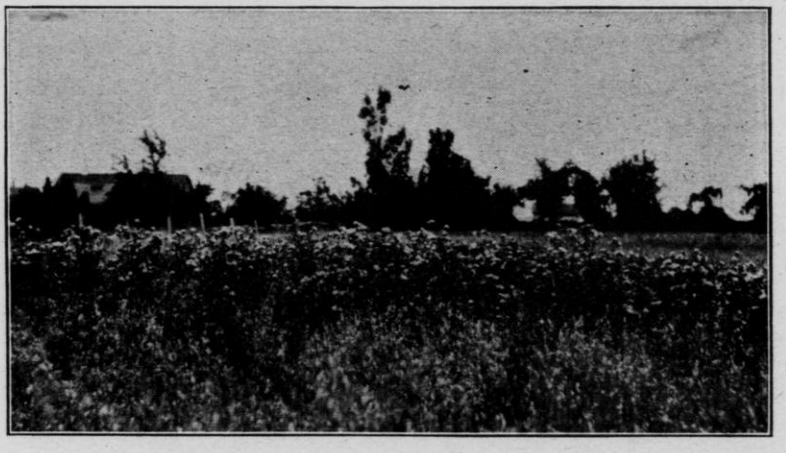
A NEW SOURCE OF GROUND LIMESTONE IN SOUTHWESTERN WISCONSIN

Huge mountains of "tailings," a by-product of the lead and zinc mines of southern Wisconsin may contain from 70 to 90 per cent lime and are being applied on sour soils for growing alfalfa around Livingston, Wisconsin, by Wilbur Rundell, George Chamley, Brainbridge Bros., and several others.

From Stone Fences to Alfalfa

(Reprint from article in Hoard's Dairyman)

IT IS an old saying that prosperity follows the plow. In parts of Wisconsin the use of lime on the land is helping the plow back to prosperity via the alfalfa route in this post-war depression. There is no question about it—experiment and experience have proven that the secret of success with alfalfa is largely a matter of the supply of lime in the soil. "We have here," says County Agent H. R. Noble, of Iowa County, who will figure in this story, "thousands of acres of high, sloping, well drained land which grows good corn and which would



CANADA THISTLES IN AN OAT FIELD

The worst patches of Canada thistles and morning-glories are being eradicated where good vigorous stands of alfalfa are established.

grow good alfalfa if it were properly limed." And such is the case in hundreds of other places not only in Wisconsin but throughout all the north central states.

Alfalfa Profits Protected

We have recently heard much about tariff legislation. Home grown Wisconsin alfalfa is completely "tarrified" by a natural immutable, "non-legislatable" tariff in the form of high transportation costs from the surplus alfalfa areas of the West to the consuming points of the Mississippi Valley and eastern points. Alfalfa hay of splendid quality has been selling for $5 to $8 a ton in the stack in Kansas, Utah, Idaho, and other western states; but add to this the tremendous transportation costs of hauling for long distances a bulky product like hay and the baling and other incidentals and you can fully understand why the retail price of alfalfa in the central and eastern states has ranged from $20 to $30 a ton, and will continue to do so.

Why not grow our own alfalfa? It gives us an average of one ton an acre more hay than any other crop, which in itself is clear profit over and above timothy growing, say nothing of the superior feeding of alfalfa.

Not Loving Clover the Less But Alfalfa More

This was Noble's plea in Iowa County, where beef cattle and dairying are of equal importance, and to his credit are 6,000 tons of limestone ground out of stone fences and quarries at a saving in cost of not less than $12,000. Asked why the clover would not fill the bill

FIGHTING CANADA THISTLES WITH ALFALFA

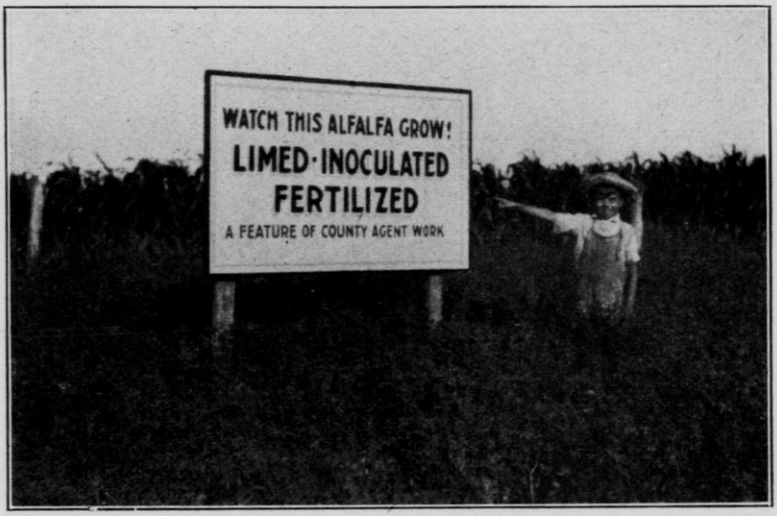
Dense patches of Canada thistles are being eradicated with alfalfa in Iowa county. Note the mixture of Canada thistles and barley in the same field are being cut for hay to save soil moisture, thus giving the new alfalfa seeding a chance to make a deep root growth to stand the dry weather of summer and to fight the thistles the following year.

for Iowa County conditions, Noble stated—"Practically all the hay seeded here is a mixture of clover and timothy, but real good clover fields are not plentiful. The trouble with this timothy—clover mixture is a good deal like the rabbit sausage maker who developed such a tremendous trade for his product that to meet the demand he mixed with his sausage a large amount of horse meat. The matter was investigated and on inquiry the investigator was informed by the sausage maker that the proportions used were about 50-50. 'Do you mean 50 per cent horse meat and 50 per cent rabbit?' questioned the credulous inspector. 'No, one horse to one rabbit,' was the maker's reply. It is just this sort of thing with timothy and clover. Many fields are mostly 90 per cent timothy and 10 per cent clover. We need

lime on these soils to make them grow clover and to make alfalfa a sure crop. We have the very best high testing lime rock all over this country. Why not make use of it by having it ground and applied to the soil to grow more alfalfa?"

The Old Order Changeth

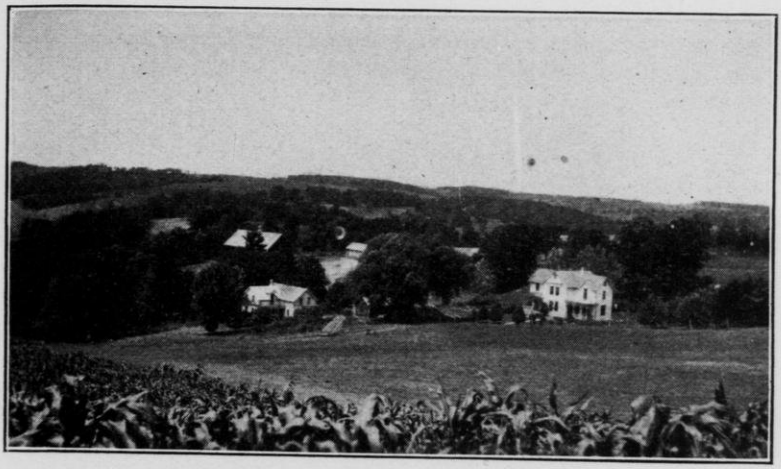
In the early days of Wisconsin agriculture when wheat growing was of greater magnitude than dairying, and for a time of greater profit, the land was treated with land plaster and salt to produce bigger crops. No doubt these crop stimulants temporarily increased



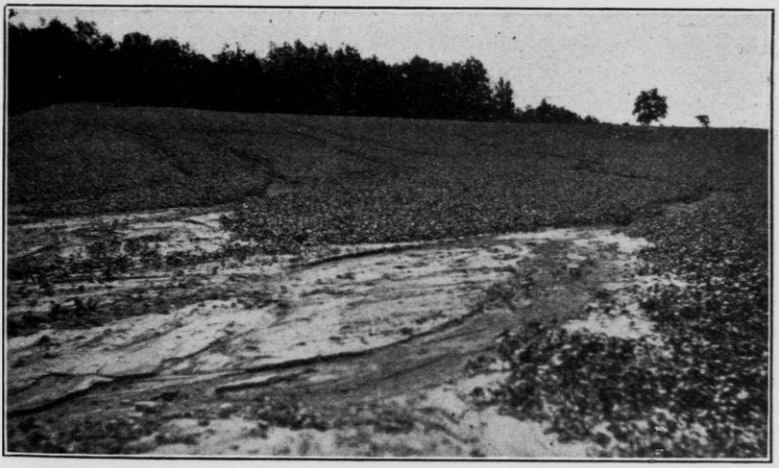
SUCCESS WHERE FAILURE WAS PREDICTED

While alfalfa has often been called the "crop that failed" in the vicinity of Cobb, Wisconsin, Fred Wiltamuth has made it a marvelous success. He attended an institute where he learned much about alfalfa and where he also met County Agent Noble who helped him in his first attempt with the result shown above which is a picture of the second growth taken July 14, 1922. The little eight year old lad, Mr. Wiltamuth's son, Frederick, who is pointing at the sign is already a top-notch farmer and alfalfa enthusiast.

the yields of those fields whose fertility was fast fading away from the continuous drain of cropping with grains and hay sold off the farm. But with the ever increasing raids of the chinch bug and the ever decreasing fertility of the soil—live stock farming found its way into the hearts of Wisconsin farmers and they began to build fences both of stone and of rail to enclose their fields and maintain their herds and flocks. Barbed wire has largely replaced the rails, but down in Iowa County there are many miles of stone fences still standing as landmarks of days gone by—as monuments to their builders who endured the hardships and trials of pioneer life. This compulsory change to live stock farming blazed the trail and laid the



ALFALFA IN A HILLY COUNTRY LIKE THIS



PREVENTS SOIL WASHING LIKE THIS

foundation for the agricultural developments and progress which followed.

At present a prominent step of this progress and development is the lime grinding work instituted, fostered, and fathered by County Agent Noble. Limestone fences are being ground to dust and put back on the land from whence they came to grow better clover and more alfalfa, both of which build up the soil for bigger and better crops of grain.

Little did the builders of those fences ever realize—and it must have been a laborious job—what the ultimate fate of that limestone would be. They knew not alfalfa—nor did their soils necessarily require lime at that time on the kind of crops they were growing. The necessity of lime is largely due to the leaching effect of abundant rains which remove annually from the surface of cultivated soils from 300 to 500 lbs. of lime carbonate. This condition has obtained in Iowa County and the remedy is being applied with vigor and enthusiasm.

Fighting Canada Thistles With Alfalfa

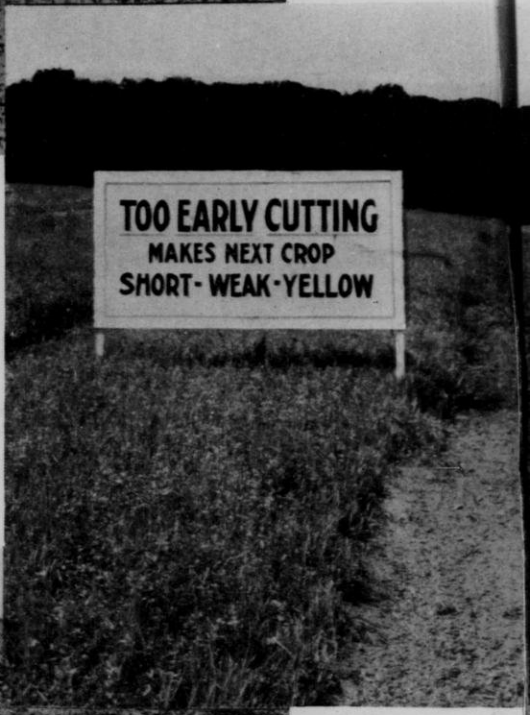
"When we started out on this program," said Mr. Noble, "we made a preliminary survey of the amount of ground limestone shipped into the county for soil purposes and as far as could be ascertained not to exceed 300 tons had been used during the previous twenty-five years. Hundreds of soil samples have been tested and they unquestionably indicate the widespread need of lime. The alfalfa growers of this county are those who have used lime or those who have land that still contains sufficient lime for this lime hungry plant. We have in the western half of this county a broad expanse of fertile, black prairie loam—such as your field down in the corn belt. It is sometimes called the 'Garden of Eden' because of its remarkable fertility. It grows splendid corn, good grain, fair clover, and excellent timothy. But alfalfa is almost a complete fizzle. It failed for Willard Huson and it faded away for the Harker Bros.; that is, until they began to use lime, which proved all that was needed to make alfalfa a glowing success. So well did it grow that on both these farms dense patches of Canada thistles were completely wiped out by the overmastering growth and frequent cutting of the alfalfa.

"This is what we hope to do on a large number of farms in Iowa County with the use of ground limestone. Alfalfa is the best weed eradicator known and while we are not badly infested with Canada thistles they have made their appearance in many places and the sooner they are checked the better for all concerned."

Two Lime Grinders at Work

Our first limestone meeting a year and a half ago was a great success—not in numbers but results. About 30 attended but after we had discussed this limestone program they signed up for 1,300 tons of limestone to be ground as soon as we could get the arrangements made. We decided to follow the Green County plan of lime grinding

Where lime was applied the heavy, rich, dark green growth occurred. Without lime alfalfa was a failure on this sour soil near Monroe, Wis



Even the hardiest strains of alfalfa may winterkill on the low areas where water accumulates and ice sheets form. Choose a sloping soil.

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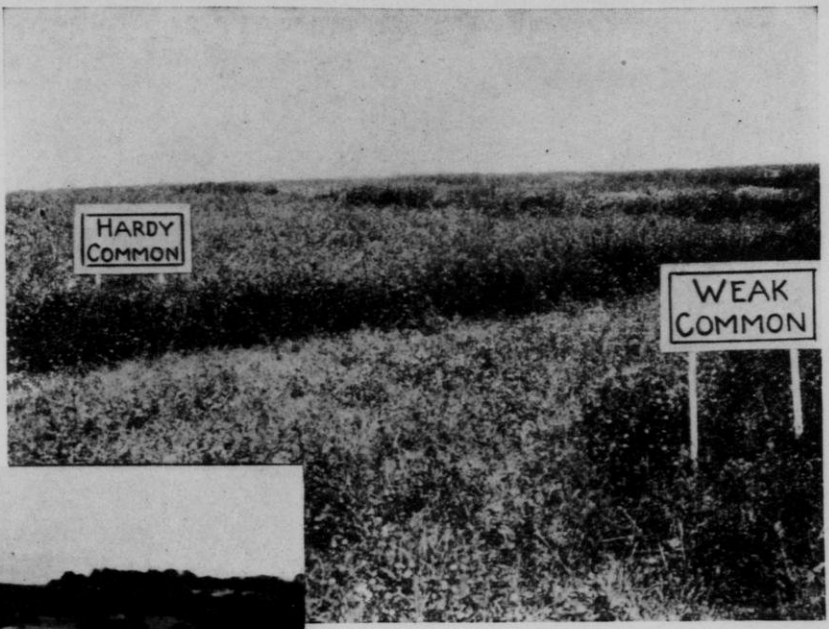
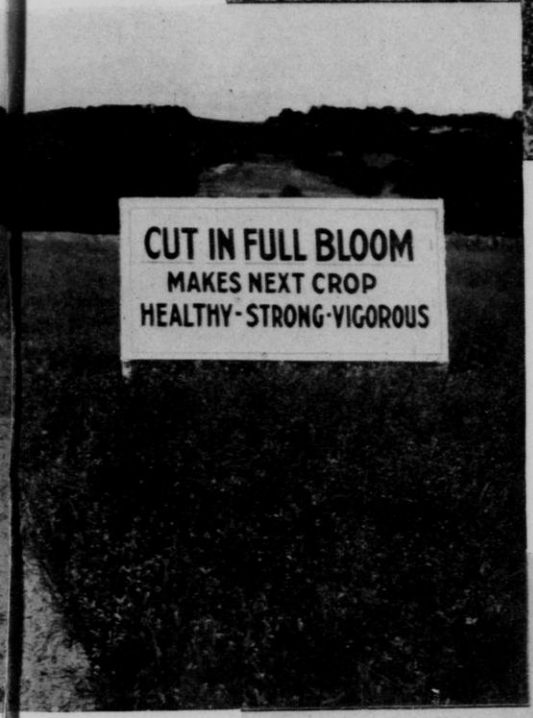


In trials with alfalfa from common seed grown in New Mexico and Arizona, it was found that these strains were generally more susceptible to winter injury than common strains from the more northern states such as the Dakotas and Montana.



New seedings are much hardier than old stands. The new alfalfa in the background did not winterkill, but the four-year-old alfalfa (same variety) in the foreground has succumbed to the rigors of a hard winter and has been largely replaced by grasses.

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Seed Alfalfa to Kill Thistles

PUT THE field in a well-cultivated crop one year before seeding alfalfa. Keep down the Canada thistles as much as possible.

Fall plow early the same year and if the thistles grow before freezing weather, disk them thoroughly.

Right after plowing apply lime if your soil needs it. A soil acidity test will tell how much to put on.

If your soil is not rich, use 8 or 10 loads of good manure an acre. Apply in the fall on top of the plowed land.

Double disk the field in the early spring.

Harrow. Then roll the field once with a corrugated roller.

Broadcast twenty pounds of good inoculated Grimm alfalfa seed an acre, and sow one bushel of early Kherson oats or one bushel of barley an acre. Then roll the seed in with a corrugated roller.

Cut this grain (and the Canada thistles) just after the grain begins to head out and haul them off the field.

If the thistles become extremely thick in the summer and begin to blossom, cut them once more leaving a stubble of about two inches or more. Rake them off the field if there is a very heavy growth.

If your alfalfa is a thick stand and survives the winter, (which it probably will) the thistles will be pretty well wiped out in three years, provided you cut your alfalfa only twice in the full bloom stage.

WHICH BRINGS THE MOST MONEY?

where, instead of having cooperatively owned grinders, local parties purchase an outfit and do the grinding at the quarries for around $2 a ton. With orders for 1,300 tons to start on it was not difficult to find those who were ready and willing to go into the business. We now have two outfits agoing. Conrad Holt is operating over in the eastern half of the county and Will Johns and Dick Evans are working in the northern section. They are doing fine work in the way of getting cheap limestone for those farmers who are too far distant from railroad stations to have it shipped in. The haul is not a small matter and not a small item. In many cases it has been the cause of lime not being used. With a supply near at hand this key to successful alfalfa growing is unlocking the door for greater prosperity, which in times like this is surely needed."

ALFALFA, SUREST HAY CROP WHERE SOIL HAS PLENTY OF LIME.

When soils are abundantly limed, well inoculated and reasonably fertile, alfalfa, on account of its much deeper root system, is a more certain crop than either timothy or clovers. For this reason it is often grown in a three or four or five-year rotation and when plowed up for corn the fall growth is sometimes turned under (as in above view) to add further enrichment to the soil than occurs normally with alfalfa roots.

Rock County Grinds Lime

(Extract from article in Hoard's Dairyman)

UNDER the leadership of County Agent R. T. Glassco and the Rock County Farm Bureau, a limestone grinding program has been initiated in Rock County, Wisconsin, which, in the past two years, has resulted in the production of 14,000 tons (500 carloads) of ground limestone at local quarries at a saving in cost to the farmer conservatively estimated at not less than $28,000.

Alfalfa Deflation Proof

"Practically all this limestone will be used to grow more alfalfa," said Mr. Glassco, as he led me into one of his numerous alfalfa-lime

MORE ALFALFA—LESS CANADA THISTLES

Says, Tony Molg of Chilton, Wis., whose alfalfa you see above: "That field was chuck full of thistle patches five years ago when I seeded it to alfalfa. Now you cannot find a weed in the whole field. Alfalfa has knocked them out."

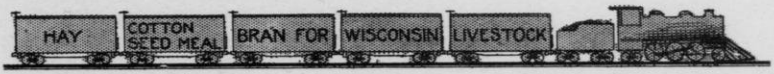
demonstration fields. "Our farmers are beginning to see light ahead. Times have been hard—bitterly so. With present market prices it takes the total yields and gross income from three acres of oats, barley, or wheat to buy what can easily be raised on one acre of alfalfa with the use of ground limestone to make it a sure, safe, and sound proposition."

How the Farm Bureau Helped

"The success of our lime grinding venture," stated Mr. Glassco, "has been largely due to the efficient cooperation of the farm bureau. We

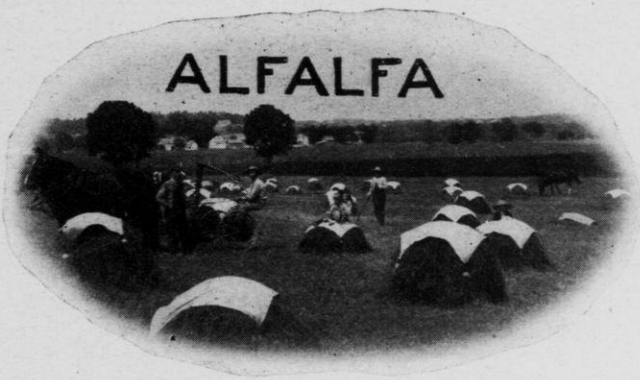
WHICH IS MORE PROFITABLE

BUYING HIGH PROTEIN FEED



OR

RAISING HIGH PROTEIN FEED WITH



went over into Green County to investigate the lime grinding work being done there by Andrew Douglas. The committee became so well impressed that it was but a short time when the farm bureau purchased outright four lime grinding machines and have ever since rented them to individual operators or to groups of farmers who were in a position to do their own grinding. A charge of 15 cents per ton in form of a royalty for the use of the machine is made to the operators who are under obligation to keep everything on the machines in good repair. As a result of this plan, grinding has been going on full blast for two years in practically all parts of the county. Four other machines operated and owned by individuals have been turning out ground limestone in addition to the farm bureau machines. We have limestone and we have the machinery to grind it. The alfalfa is bound to come."

Travelling through Rock County by auto, one cannot help but be impressed with the large number of small three and five-acre patches of alfalfa which were established last spring. "These," declared Mr. Glassco, "are the beginning of large fields which will soon come with the extended use of ground limestone."

An Apostle of Lime Grinding

We continued on our way to see the veteran lime grinder of Rock County operating at full capacity in a quarry near Beloit. In the past eighteen months, George K. Nelson has ground over 4,000 tons of lime rock for Rock County farmers. He is not only a lime grinder but an ardent disciple of alfalfa and the farmers know him as the "Apostle Paul" because of his genuine sincerity and enthusiasm for lime and alfalfa. He has a farm bureau machine rented and grinds the limestone at $2 a ton. "Oftentimes," said Mr. Nelson, "the farmer will haul the limestone just as we grind it. Our elevator delivers it right into the wagon box and if his fields are ready he can load, deliver, and spread the limestone with only one handling. Most of my lime grinding has been from three to ten miles from railroad stations. To have lime shipped in requires a long haul—the unloading of the car which is always uncertain as to the time of arrival and the re-handling if the field is not ready for the application. All these difficulties are overcome by local grinding. The saving in cost is big but is really not the big benefit. What counts is that these farmers are using lime which they need but would never have used unless this lime grinding program had been put into effect. Yes, sir, the big thing about this work is that it will mean more alfalfa, less weeds, and less of the kind of crops like timothy and some others that do not pay. I like the work. We keep four men agoing and with this machine can turn out all the way from 15 to 25 tons a day depending on the condition of the rock, weather, and our machinery. We get a good deal of pay in the form of satisfaction which comes from seeing the many beautiful fields of alfalfa springing up in those sections where we have ground limestone."

How Thick Shall We Sow Alfalfa?

AS A GENERAL rule the more favorable the soil in its fertility, lime content and seed bed preparation, the less seed required.

1. Where land is seeded to alfalfa for the first time and where the soil conditions are not entirely favorable not less than 15 pounds should be used and many growers prefer 18 to 20 pounds an acre, especially when they sow common alfalfa.

2. Under ideal soil conditions where it is very easy to grow alfalfa, good stands have been obtained with 12 to 15 pounds of good Grimm seed an acre. Grimm and other hardy strains of alfalfa spread more and other things being equal, slightly less seed may be required.

3. In choosing a proper rate of seeding, bear in mind that it is far better to err in sowing more seed than necessary than it is to sow less than is required.

4. Many of our growers prefer heavy rates of seeding because of the finer quality of hay and they feel that there is less blue grass trouble.

Opinions On Curing Alfalfa Hay

Math. Michels, of Peebles, who cures his hay in the barn, says:

"I fully realize if weather conditions are favorable and a pea-green hay is the aim, best results can be obtained by the cocking and capping method. This method, however, not only entails more labor but also endangers the growing of the following crop.

"Our aim for the past ten years has been to get the most palatable alfalfa hay with the least possible labor regardless of the color of the hay. In fact, we aim to produce as much as possible of light brown colored hay. This kind of hay has proven to give us the best results in the feeding of cows for production as well as keeping up the health and breeding ability of our herds.

"We cut our alfalfa early to avoid coarseness and lodging. After it is partly wilted though the underside of heavy bunches may be still green we rake with side delivery. After two or three hours more drying we load the loader drawn by a tractor. We unload with slings and distribute all over the barn to a depth of not over ten feet at a cutting evenly mowed away. Hay made thus will not cure right if piled up high in the mow. Do not disturb when heating takes place. There is no danger of spontaneous combustion if free from rain and dew when hauled together."

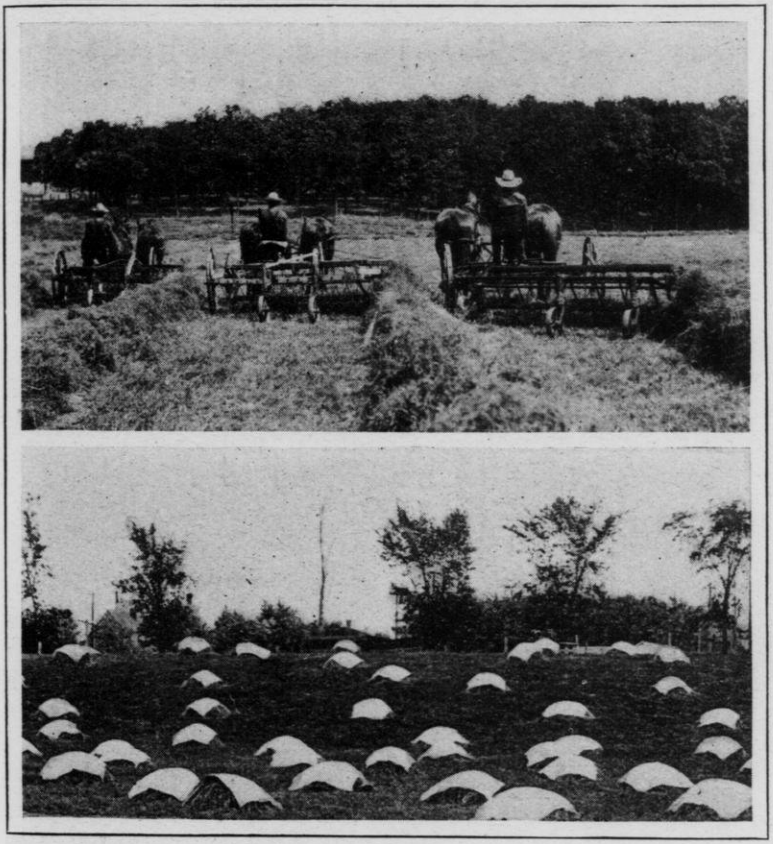
Peter Swartz, Waukesha, who hays in a hurry, says:

"The modern grain binder scatters some grain. The modern thresher cracks some kernels and blows some in the straw, but the present generation will never go back to the cradle and the flail. It took my grandfather 83 days to cross the ocean in coming to America. Today the same trip is made in less than a week. So it is with our hay making operations. Modern hay making machinery may lose a few alfalfa leaves but with large acreages to handle we must use rapid hay making machinery to cope successfully with a crop that grows with such pep and energy as does alfalfa on the Cornfalfa Farms."

L. A. Wells, of Mauston, says:

"When I first started growing alfalfa, a couple acres, I always cured it in bunches and still think that is the best way to make the highest quality hay. Now that we cut from 10 to 15 acres three times per year, it is out of the question to bunch it up. Help is too scarce. We always use a hay loader. Of course leaves fall off, but we don't consider it a loss for they help to fertilize the land.

"Every load of hay is completely spread over a 30 by 40 foot mow, giving a thorough chance for aeration. In my opinion spontaneous combustion in hay-mows is caused by dropping large hay forks full of hay, allowing them to pile up in the center, then merely tipping them over right and left, leaving solid bunches with air-pockets between. Hay mowed away in this manner will invariably heat and



WHICH IS MORE PROFITABLE?

Hay cured in bunches with or without hay caps or by use of labor saving machinery such as hay loaders and side delivery rakes. E. B. Hart of the Wisconsin Station finds that the mineral nutrients of alfalfa are made unavailable when the hay is poorly cured, especially when discolored by heavy dews or rain.

perhaps spoil. We use nothing but the pure Grimm and are more than pleased with our alfalfa growing."

Jacob Bast, of Rockfield, believes in bunching:

"I will always recommend bunching. We don't start to cut until the alfalfa is dry in the morning. We usually run two mowers until twelve o'clock. In the afternoon we rake and bunch until five o'clock, but no later. We let these bunches stand about five days, then if the weather is suitable we spread those bunches a little apart and in a few hours it is dry enough to haul home. Then a drum hay loader can be used as we try to get those bunches in a fairly straight line."

CURING ALFALFA IN BUNCHES WITH OR WITHOUT CAPS GIVES A GOOD QUALITY OF HAY

This is one of the best ways to secure a leafy, green, well cured hay, but the amount of labor involved appears prohibitive on many farms.

How Scarification Helps and Hurts

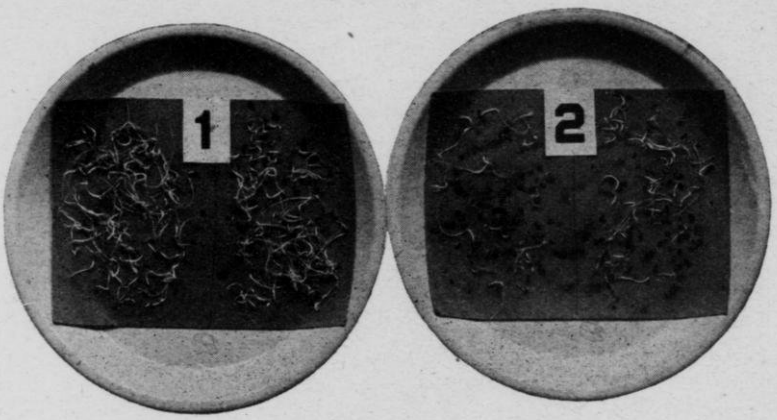
(Summary of scientific article in Jour. Am. Soc. of Agronomy, Nov., 1922, by L. F. Graber)

IT FREQUENTLY occurs that alfalfa, sweet clover and red clover seeds will contain a high percentage of kernels which have very hard outer shells or coats. This condition prevents the absorption of moisture and causes long delayed germination. A machine which was perfected by Professor Hughes, of the Ames College of Agriculture, forces the seed through a tube lined with sandpaper. This

SCARIFYING ALFALFA SEED TO IMPROVE IMMEDIATE GERMINATION

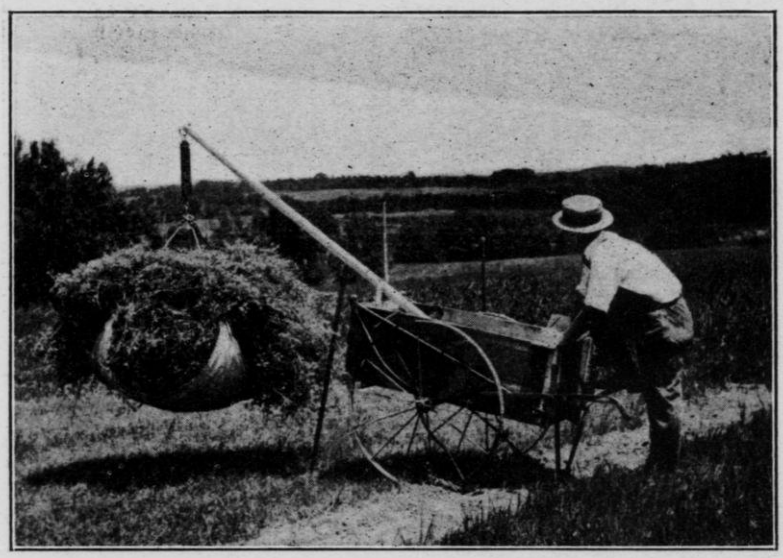
Alfalfa and sweet clover seed may, at times, contain from 15 to 30 per cent or more of hard coated seeds known as "hard seeds" which, while alive, may not sprout for several weeks because they do not absorb moisture readily. By running the seed through scarifier the seedsman may improve the immediate germination very materially. Scarifiers are quite expensive and are not practical for the average farm.

scratches the hard coated seeds and removes particles which permits the rapid absorption of moisture and immediate germination. That this process of scarification is an effective means of eliminating hard impermeable seeds and thereby increasing the immediate germination is an unquestionable fact. Samples of high priced Grimm alfalfa seed giving a germination of from 70 to 77 per cent (containing 23 to 25 per cent hard seeds) have been scarified and the viability increased to 91 and 94 per cent respectively. In sweet clover the germination has in some instances been more than doubled by this seed scratching treatment. These results indicate the effectiveness of this process



SCARIFIED SEED BEST SOWN WITHIN A YEAR

Both scarified and unscarified alfalfa seed were stored for three years in a cool, dry basement. At the end of this period the untreated seed (1), which originally germinated 85 per cent, gave a test of 70 per cent. The scarified seed (2) with an original germination of 89 per cent dropped to 32 per cent.



WEIGHING UP YIELDS FROM ALFALFA PLOTS ON THE EXPERIMENT STATION FARM, MADISON, WIS.

for improvement of immediate germination but its influence on the longevity of alfalfa seed seems decidedly opposite in character.

Four lots of alfalfa seed, (Table 1) were scarified which increased the germination from 71 per cent to 85 per cent. Both scarified and unscarified portions of these lots of seed were stored in a cool dry basement for two and three years. At the end of these periods the germination of the treated seed fell from its original viability of 85 per cent down to 40 per cent—a loss of 54 per cent. The untreated seed actually gained in immediate germination from the original average of 70.6 per cent to 74.4 per cent at the end of two and three years due to the gradual softening with age of the hard coated seeds. It has been known that hard seeds maintained their longevity better than the permeable seed but the rapid deterioration from the scratching process of scarification is most amazing, and of the greatest importance to seedsmen and seed growers organizations where circumstances may require the storage of alfalfa seed for a year or more. This process had best be confined to seeds that are to be sown not later than a year after treatment.

TABLE I. EFFECT OF SCARIFICATION ON THE LONGEVITY OF ALFALFA SEEDS STORED IN A COOL DRY PLACE

Sample No.	Variety	Age of Seed in Years (a)	Seed Treatment	Germination			
				Original		Final April, 1922	
				Immediate %	Hard Seeds %	Immediate %	Hard Seeds %
597	Baltic	4½	None	85	10	70	10
597	Baltic	4½ (b)	Scarified	89	7	32	0
654	Grimm	3	None	66	(c)	74	4
654	Grimm	3	Scarified	82	(c)	29	0
655	Grimm	3	None	62	(c)	78	4
655	Grimm	3	Scarified	79	(c)	31	1
847	Grimm	3	None	70	25	81	10
847	Grimm	3	Scarified	91	(c)	40	0
1005	Grimm	2	None	70	22	69	14
1005	Grimm	2	Scarified	91	(c)	68	4

	Original	Final
Average immediate germination of unscarified samples	70.6%	74.4%
Average immediate germination of scarified samples	86.4%	40.0%

(a) Unless otherwise indicated the seed was scarified within five months after harvest.

(b) Scarified when one and one-half years old at which time original germination tests were made.

(c) Per cent hard seeds not recorded in orgiinal test.

ANNUAL MEETING
WISCONSIN EXPERIMENT ASSOCIATION

Madison, Monday, January 29

Agricultural Hall Auditorium

Twenty Years Successful Merchandizing of Pure Bred Seeds.....
.....R. A. Moore, Madison
Production that Pays.....L. F. Graber, Madison

Agronomy Building

Business Meeting of Experiment Association and Alfalfa Order
Address, President Experiment Association.....
.....C. S. Ristow, Black River Falls
Address, President Alfalfa Order.....S. P. Markle, La Crosse
Secretary's Report.....R. A. Moore, Madison
New Business
Election of Officers, Experiment Association and Alfalfa Order

Tuesday, January 30

Agronomy Building

How Wisconsin's Alfalfa Acreage is Being Increased
(1) Home Ground Limestone.....Conrad Holt, Hollandale
(2) Dangers of Cutting Alfalfa Too Early...L. F. Graber, Madison
(3) Grinding and Delivering Limestone F. O. B. Farm.....
.....County Agent, G. N. Baumeister, Freeport, Ill.

GRAIN SHOW IN STOCK PAVILION

(Monday to Friday Inclusive)

OFFICERS—1923

President.....T. H. Campion, Wauwatosa
Vice President .....Elmer Biddick, Livingston
Secretary.....R. A. Moore, Madison
Assistant Secretary.....E. D. Holden, Madison
Treasurer.....J. E. Brunker, Ridgeway
Clerk and Stenographer.....Cetelle Arthur, Madison

COMMITTEES

Executive

Chas. Ristow.....Black River Falls
F. E. Bell.....Columbus
A. L. Stone.....Madison
Henry Michels.....Fond du Lac

Geo. M. Briggs.....Madison
E. J. Delwiche.....Green Bay
J. N. Kavanaugh.....Green Bay

Resolutions

W. L. Ames.....Oregon
Howard C. King.....Madison
Rufus Gillett.....Verona

Finance

E. D. Holden.....Madison
H. N. Longley.....Dousman
H. E. Krueger.....Beaver Dam

President's Address

C. S. RISTOW

After a lapse of four years we are once more in Madison to hold our annual meeting; may this be our very best meeting.

There are opportunities for more pure bred seed growers in our state, especially corn breeders are needed, one to each township would not be too many. The thousands of acres planted annually to corn creates a big demand for seed, since few farmers save their own seed. Corn perhaps more than any other crop will deteriorate if unselected, and revert to the original types—flint varieties and the so-called "squaw corn;" hence the necessity of corn breeding. Good seed is cheap at any price.

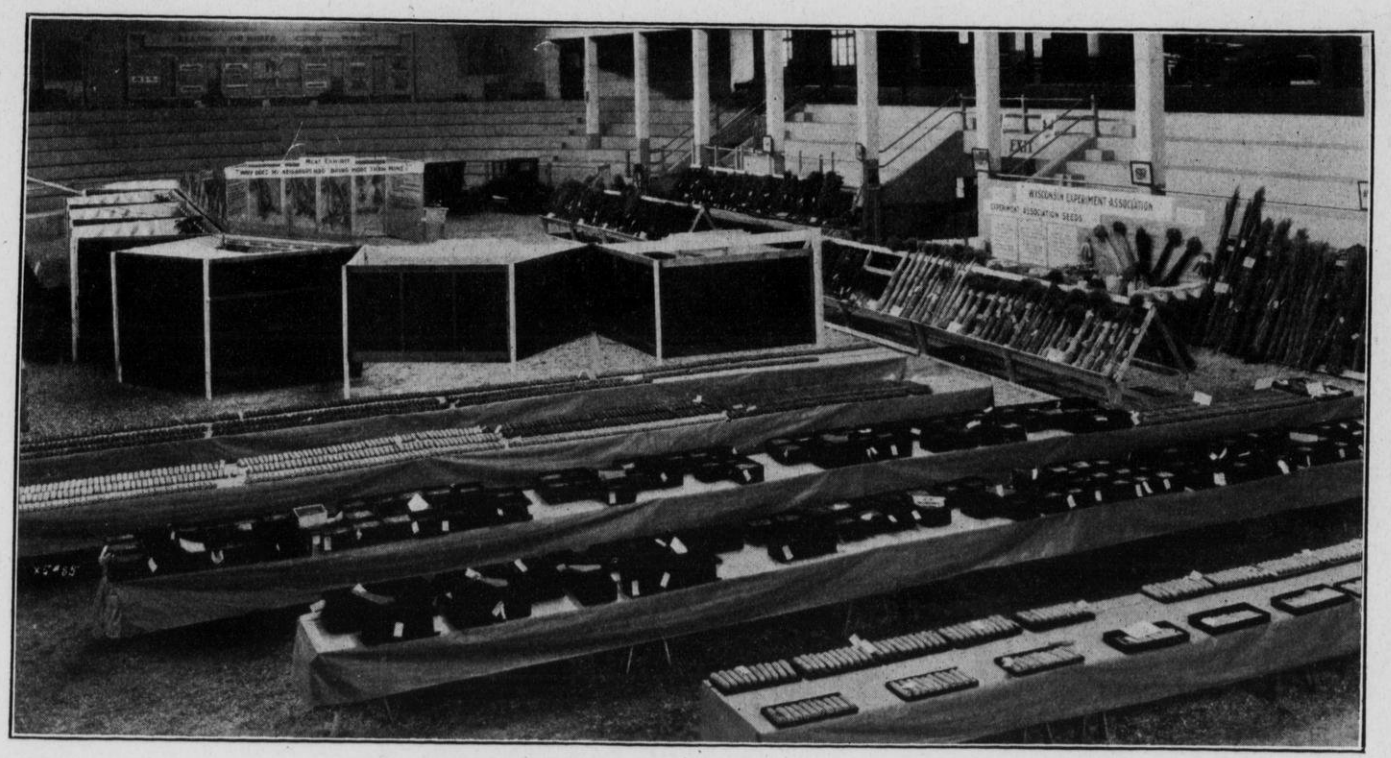
One means of getting farmers interested in pedigreed grains is through the County Agent. He is in a position to meet and advise many farmers. Some Wisconsin counties think they are economizing and are doing without a county agricultural agent. I am more than glad to say that my own county (Jackson county) finds that it is true economy to employ one.

I said that the county agent is one means of getting farmers interested in growing pure bred grains, but the county agent can't do it all. We must all work together.

I wish to offer a few suggestions that I think are important if we hope to keep this Wisconsin Experiment Association what it has been in the past and what it should be in the future. We must be constantly on the alert and have thoughtful care of the future; therefore I have the following recommendations:

(1) For furthering advertising I favor a booth at our state fair, with appropriate maps and charts to further the use of pure bred grains, and an attendant, each day, to be in the booth to answer questions to those interested.

(2) Have a 100 Bushel Per Acre Corn Club, having the names of the winners conspicuous at all our state and national shows, also a list of same hung on a chart in our Agronomy building in Madison.



1923 State Grain Show, Stock Pavilion, Madison.

(3) More thorough inspection—even though it costs the farmer a nominal sum for having same done. If we are to stand back of the seeds we sell we surely don't want anything but the best put on the market. A case recently came to my attention where one of our growers sent soy beans of inferior quality with trash and cracked beans in them, to a number of farmers upon recommendation of the county agent, and charged a price above what most seedmen were asking—with result that not only is this one seedman a black sheep in the eyes of 34 farmers and one county agent, but the whole association is regarded as a dangerous and questionable source of good seed. I myself, being a member of this association, to protect my own interests, feel that it is unfair to be penalized when I was not at fault at all in this particular case.

(4) There should be some different classification used in our seed list. When a farmer gets to specializing to the extent that he has 12 to 18 different kinds of grains, or different varieties put up for sale, surely, I believe it is about the limit that a man can go, and I would be in favor of including these men, who are seedmen and not farmer growers, on a separate page from the rest of us growers. Just put the names of all state creditable seed companies, on one page and it would suit me.

(5) I am in favor of more work on county orders. (a) To increase interest in better grains. (b) So that more members can belong to state organizations.

I feel that drastic action must be taken to keep this association on its feet and to maintain the high standard that has always been kept by the association. I ask this of you all from a selfish viewpoint —that of being protected myself.

We have received a vast amount of wisdom that Professor Moore, our esteemed secretary, has gained from long experience and some sacrifices; and it is our obligation to him, to this Association and to our state to return this gift with interest, and the only way to fulfill this obligation is by doing our part to make a better future, and to do it without grumbling or complaining. Hard work is conducive to good health and good health brings happiness. I hope that the year of 1923 will be our very best year; and that we may be able to put pedigreed grains on every Wisconsin farm. Wishing is not working; a lot of folks waste too much time in wishing that things might be different. Let us not be wishers, but workers and boosters for the Wisconsin Experiment Association and success will be ours.

Secretary's Annual Report for 1922

R. A. MOORE

Members of the Wisconsin Experiment Association:

The Wisconsin Experiment Association has now passed its majority and enters upon the twenty-third year of its work. The general report which I am giving covers the work of 1922.

This has been a memorable year for the Association as it marks the lowest point in decline of farm products since our World War and also marks the turning point for the better. The Wisconsin Experiment Association has weathered the storm during the past five or six years far better than we really anticipated. While we experienced a decline in membership, yet, our Association still has a formidable force going forth with a determination to a victorious end.

It has seen the hopes of many organizations and business enterprises go by the wayside and at times it has wondered what the final outcome was going to be. We can now see the light of day and the revival of better times and it is largely through the steadfastness of loyal members that we now see the clouds lift and stand forth once more as an inspiring organization before the world. We know that new members will rally around our standard and carry the membership far above our fondest expectations and that many farmers will have reason to feel grateful for the services rendered them through these trying times when it was so difficult to get anything in the shape of good seed.

Membership

The membership of the Association remains approximately the same as in 1921. The allied organizations working with the Association have approximately the following:

Alfalfa Order	700
Soybean Order	100
Hemp Order	100
Sorghum Order	50
50 County Orders of the Experiment Association	3000
Total	3950

The State Association has a paid-up membership of one thousand, thus making a grand total membership of 4,950.

By an amendment passed at the last meeting any person taking an interest in pure bred grains and livestock and who is also a member of the county organization, through the recommendation of the Secretary of the County Association is eligible for membership in the State Association. This amendment has been instrumental in enlarging the membership of the State Association and those members which have entered under this arrangement have so far proven very loyal members. We are pleased to recommend to our Association this

class of people who have really proved themselves worthy of belonging to our Association through their own efforts and enterprise.

Competitive Grain Displays Since the Last Annual Meeting at Green Bay

Never before in the history of the Association has it pushed forth its work so vigorously as it has this past year. It has participated in the work of County, District, and State Fairs as well as National and International organizations. It has led the way for many of those

A Fine Rack of Sheaves.

organizations in the methods and ways of making complete expositions of the value of pure bred seeds.

The State Association took part in the Wisconsin State Fair, the International Hay and Grain Show at Chicago and also took an active part in the placing of a commendable show as well as sale booths at the Wisconsin Products Exposition, Milwaukee.

The work of the Association is attracting more and more attention and is becoming more and more a leading educational organization for those who become connected with it.

Placing of the Annual State Show

For two consecutive years, the State Experiment Association has held its annual meeting in La Crosse and Green Bay respectively. The object of this move was to give people in other parts of the state an opportunity of seeing a great pure bred seed grain show. The competitive Grain Show at Green Bay was one of the best ever held by our organization. Although held in the midst of a storm people came many miles to attend the show and saw for the first time in their lives a great educational exhibit of pure bred seeds. The schools of the county were dismissed for a day and the students had an oppor-

tunity of attending this great exposition. Many of those received impressions of beauty and care of putting up seed grains which will make a lasting impression upon them as long as they live. Many beautiful letters were sent in by the young people competing in essay work on the great show. The people of Green Bay and in the surrounding county were deserving of great credit for the masterly way in which they financed the show. Over $2,000 was put up in prizes and spent in pulling off the greatest pure bred seed grain show that was ever exhibited in Wisconsin.

The executive committee, feeling the advantages that could be secured by its general membership in visiting Madison at the time of the Farmers' Course, unanimously decided that the twenty-second annual meeting should be held at Madison and the exposition of seed grains placed in the livestock pavilion so that the farmers as well as the members of the association would have an opportunity of seeing this great exposition of pure bred seeds.

For three years the Wisconsin Experiment Association has been interested in and has given encouragement in funds as well as services of men in helping put on a grain show in the northern part of the state. This great show is put on after the county fairs and community grain shows and is a culmination of the competitive work of Northern Wisconsin. These shows are held in different counties so as to enable the people of the various counties to attend and observe a display of that which is most worthy in their respective section of the state. These northern annual shows have attracted widespread attention and have brought together the workers of the north so as to exchange ideas and products which are so helpful in community work. The prize winning samples of the Northern Grain Show are held and sent to compete at the Annual Experiment Association Show. This then enables the people of the state who visit the annual show to see the winning samples of the northern show exhibited besides the winning samples of other portions of the state. This makes an educational display of grains that cannot be surpassed anywhere in our country.

Two Acre Corn Contest Work

During the past four years efforts have been put forth by the Experiment Association to determine the largest yield of marketable corn that could be secured per acre.

Prizes have been offered and a deep interest has been manifested in this work. The grower securing the largest yield of corn per acre was M. J. Strunk, Ft. Atkinson, Wisconsin, with a total yield of 171.6 bushels of shelled corn per acre.

The contest fields were all visited by disinterested persons and the yield determined by such parties selected to do the work. Also samples of corn were sent to the Experiment Association and moisture tests are made so that all corn is reduced to a minimum moisture test. All yields are therefore based upon the moisture test of 15 per cent. These phenomenal yields which have been secured is a criterion as to

the amount of corn that it is possible to grow per acre. When we consider that the average yield of the state usually runs from 40 to 45 bushels per acre and it is yet possible to grow 170 bushels per acre, we note the wonderful field yet for improvement.

When the five-year contest was carried on with corn in which 1,550 members of the association took part, a yield of 62½ bushels per acre was secured. We can readily note that there is yet a wonderful opportunity for improvement when in the contest work we are able to receive the phenomenal yield of 100 bushels per acre and above. We think this line of effort is well worthy of continuation as it gives all members of the association an ideal in yield to work for.

Of course, while we are encouraging these high yields obtained in the two acre contest we must not lose sight of the fact that these yields are secured under somewhat abnormal conditions. However, many of the fields inspected by the writer were staked out in the general field and were grown under the regular field conditions. It further emphasizes the great truth in the fact that in many European countries the farmers are securing nearly double the yields in small grains per acre that we are receiving in the United States. Consequently, we feel the striving for high yield per acre is an exceptionally good practice as the success of the farmer is going to be determined quite largely by the cost of production of farm products.

Average Yields Per Acre of the Pure Bred Pedigree Grains

Variety	Average Yield
Pedigree Barley	48.3
Oats—Pedigree 1	48.0
Pedigree 5	30.5
Pedigree 7	37.1
Pedigree Rye	27.1
Marquis Spring Wheat	12.6
No. 7 corn (Silver King)	66.7
No. 12 corn (Golden Glow)	63.5

Seed Peddlers

Mention was made in the last report of the practice of seed peddlers coming in from other states to disseminate seeds that are only known by their names. If some reliable pedigree varieties that have been tested out by various stations and had something to back them up in the way of a pedigree were sold through the state, we would not so seriously object to the proposition providing they were sold at a reasonable rate. However, it is a fact, that many of these so-called canvassers secure three and even four dollars per bushel for oats and barley which seed is not as good as barley and oats that can be secured direct from members of the Experiment Association at $1.00 or $1.25 per bushel. The same thing is true with all other farm seeds.

The seed peddler usually has samples of seed and beautiful pictures of fields of grain to illustrate the material he has to sell. Many farmers are led to believe that the grain secured is of some superior variety and consequently part with their money for a scrub variety

of grain which is a serious detriment to them on the farm. We desire to discourage this from every possible angle and hope the time will come when our farmers will not be so ready to purchase from entire strangers that have nothing but pictures and talk to back up their proposition. All members of the Experiment Association and all good seed houses of the state have a reputation to protect and if inferior seeds are secured they can be taken to task for any underhanded work done.

However, it is entirely different with the seed peddler whose permanent address is seldom or ever known who may be liable to ship in any kind of seed after he has received the money for such seed. The State Seed Inspection Department cannot get such parties after they are beyond the limits of the state. As far as your secretary can see, there would be no apparent harm in members of the Experiment Association canvassing by letters or otherwise, farmers in their own locality who may know of them even though they might not be directly acquainted with them. Much of this canvassing could be done by telephone and it is my opinion that many sales could be made by members of the Association in their own localities by more frequent use of the telephone and by running short articles in the home papers. Determined efforts are going to be put forth to grow more seeds and consequently this is going to call for more strenuous marketing efforts.

We desire to emphasize at this time that we have started out to double our production of farm seeds and we desire to have a good market for every bushel produced. This will need the assistance of every member of the Association as well as the officials of the organization.

The growing of the ordinary grains upon the farm is practically a thing of the past and no farmer can show a balance in his ledger on the proper side by merely growing the ordinary grains to place upon the general market. He is up against three propositions. (1) Grow pedigreed grains; (2) sell pedigreed grains as seeds and (3) marketing the farm crops through the farm animals.

First, the growing of pedigree grains that have long records of high yields. This is to give him the maximum yield over and above the general yield per acre. Secondly, part of the grains grown at least must be sold at seed grain prices which are usually double the price of ordinary grains upon the market. The custom usually followed is by putting the pedigree grains grown upon the farm through good graders using about one-half the grain for seed and the other half to run through into the seeding bins, we find to be the ideal method of handling grains at a profit upon the farm. No other method, as far as we can determine will show a profit on the right side of the ledger.

A test carried out in one of our neighboring states showed that oats grown through a series of years upon the farm and placed upon the market showed a general loss to the farmers growing them. This was supposed to be an average of an entire state. Consequently the quicker we get away from any such ruinous methods of farming,

the better it will be to all concerned. Wisconsin is already setting the pace in profitable farm production and the Wisconsin Experiment Association wishes to blaze the trail to determine the successful way in which farm grains can be put upon the market.

Seed Grain Inspection

During the past year, like many previous years, considerable effort has been put forth upon the inspection of fields of growing grains.

The county agents have cooperated very closely with the Experiment Association in this work. Without this valuable service it would have been next to an impossibility for the work to be done on such an extensive scale. We find that when the grain is growing and nicely headed out in the field that mixtures can be detected much more readily than they could be if the grains were in the bin. Consequently grain reaches that stage at nearly the same time throughout our state and it would be almost next to an impossibility for a few inspectors to do the work but through the aid and assistance of the county agents at that time of the year, we are able to reach nearly every field in the state during the heading period of the grains. These visits are not alone for the acceptance or rejection of the fields of grain but are of an educational character which helps the grower very much in determining further standards.

Through the inspection of many fields by the writer during the past year and the rejection of several, yet, not a single complaint was heard on the part of the growers. As soon as any mixture of grains can be pointed out or weed growth made manifest to them they have felt even more urgent to have the field rejected than the inspector himself. This is a commendable spirit on the part of members of the Association and points conclusively to the fact that where we have such active cooperation on the part of the growers that we do not fear the sending out of inferior grains.

Bin Inspection

After grains are clean and properly graded a sample is either taken by an inspector or sent directly to the office of the Experiment Association where it is tested and can then be placed upon the "inspected" list and the grower furnished with the proper certificate of inspection.

Considerable agitation has been brought about by some seed firms and some state organizations in regard to the advisability of sealing sacks by the growers before the same is shipped to the purchaser. The Experiment Association has taken the stand that such a process would be very cumbersome and the red tape and expense necessitated by carrying out this method would be such that it would throw the work merely into the hands of a few and the large numbers which we are desirous to reach and benefit through the growing of pedigree seeds would thus be nullified. We are firmly convinced that the sealing of the sacks would not necessarily make the seed any better or worse and consequently would be an uncalled for job which would be

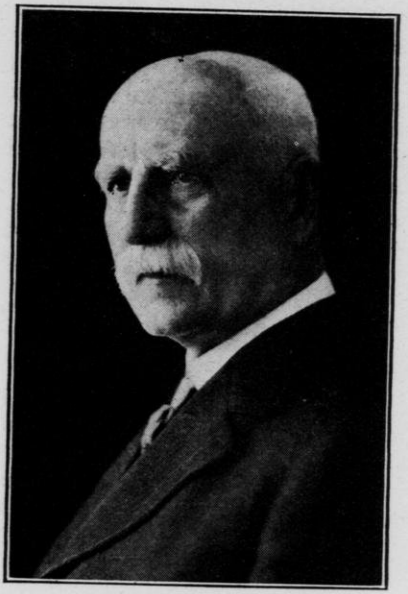
very expensive. We feel that it is much better for a purchaser to receive his sacks of seed from an honest grower even though unsealed than possibly get sealed sacks from a person that was not so careful of his reputation.

We do feel where we have certain organizations in the West that ship out definite varieties of alfalfa seed to eastern growers that there is a decided advantage in securing such seed by the purchaser in sealed sacks from these particular organizations. Thus enabling the farmer to get a special variety of seed direct from the farms where grown that is not mixed in with other varieties. However, this method of sealing sacks by certain organizations where the alfalfa is brought to one central warehouse for cleaning and sacking would not obtain where it applied to several hundred growers of common farm seeds such as we have in the Wisconsin Experiment Association.

State Fair

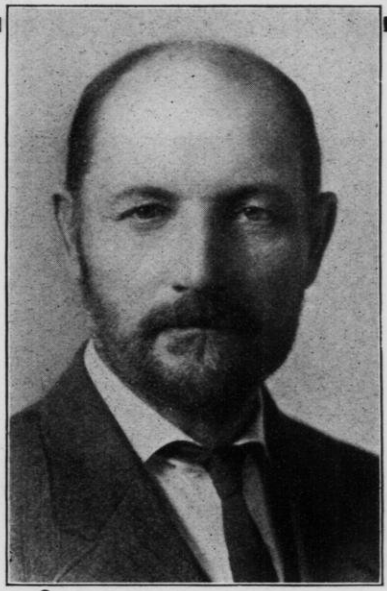
During the past eight or ten years the Wisconsin Experiment Association has put forth special effort in cooperating with the Commissioner of Agriculture in putting on the best possible at the state fair. The County Fair Board have seen fit to duly recognize the effort being put forth to better the farm crops of the state by offering liberal prizes and other inducements for displays made from the various counties of the state.

The County Orders of the Experiment Association have rallied to the call and have been instrumental in putting in a display of farm products that far exceeded any other state in America. The secretary does feel that a little more effort could be placed upon the marketing of pure bred seeds at the state fair where so many thousand farmers attend. We think it well that this subject should be taken up and discussed with the officers of the state fair to bring this about. It seems that some method could be devised whereby farmers and those interested in the pedigree seeds could be brought in contact with each other at this memorial gathering.



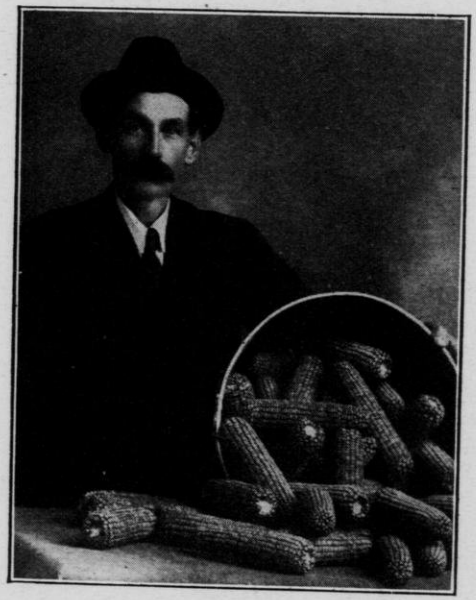
Dr. L. D. Harvey

With the passing of Dr. L. D. Harvey on June 1, 1922, the Experiment Association lost a powerful friend and ally. Dr. Harvey was one of the leading educators of our country; had been President of the State Normal School at Milwaukee, state superintendent of public instruction and president of the National Educational Association, and was since 1908 President of Stout Institute at Menomonie. His breadth of view in education brought him into close sympathy with the work of the agricultural college in training farm leaders, and he was intensely interested in the Experiment Association and its work of putting the best in agricultural education into practice on the farm. Many of our members will recall his strong and inspiring addresses, and his helpful encouragement. He was made an honorary member of the Experiment Association in 1903, and will always be remembered as a helpful friend and wise counselor by our older members.



James B. Cheesman

It is with a very deep regret that we are obliged to chronicle the death of one of our most sincere and earnest workers for agricultural progress, Mr. James B. Cheesman. Twelve years ago Mr. Cheesman called the attention of Professor Moore to the value of a state alfalfa growers' association, with the result that in September, 1911, the Alfalfa Order was organized and Mr. Cheesman was elected president and held this office for five years. His wise counsel and advice made it possible for the organization to function in stimulating the acreage and at the same time through state wide cooperative trials a large fund of valuable information was obtained which at the present is making alfalfa one of Wisconsin's surest and best hay crops. No man took a deeper interest in the agricultural affairs of our state than did Mr. Cheesman. Wisconsin's splendid alfalfa fields are and will be memorials to his foresight and accomplishments. The Alfalfa Order and the parent association, the Wisconsin Experiment Association, severely feels his loss and extends the sympathy of all its members to the sorrowing wife and family.



H. C. Brueckner

On May 16, 1922, Mr. H. C. Brueckner, one of our well known members, passed away. For the last twenty years he with his family had made his home on their farm near Jefferson, and for twelve years he was an active worker in the Experiment Association. He was known throughout the state among corn growers for his fine strain of Murdock corn which attracted attention because of its remarkable uniformity and fine appearance. He was a certain prize winner at our grain shows, and did a great service in selling high-class seed, so that some of the finest corn in different parts of the state traces back to his work in selection and breeding. Mr. Brueckner leaves behind him a host of grateful and appreciative friends.

The 1923 Grain Show

In the two years that the grain show visited La Crosse and Green Bay respectively, it grew to such proportions that upon its return to Madison the old quarters in the Agronomy building were too small and the 1923 show was held in the Stock Pavilion. Coming at the same time as the Farmers' Week program at the Agricultural College, which had an unusually large attendance, a large number of visiting farmers had an opportunity to inspect and study the grain and forage exhibits. As the theme of this year's program was "Merchandising the Farmers Way Out," the Association made special effort to feature quantity seed lots, and the "merchandising" booth received a great deal of attention. The annual meeting was the largest in years, and it was good to see so many old friends.

OSHKOSH CORN JUDGING TEAM
T. G. Brown (coach), Milton Cowan, Howard Wood, Orin Wesenberg.

Cup Goes to Oshkosh High School

Junior Corn Judging Contest, Madison, February 3, 1923

After visiting around for the last five years with Marinette County School of Agriculture, Waterloo, Viroqua, and Oshkosh High Schools, the silver trophy for corn judging will henceforth make its permanent

home at Oshkosh. With a score of 263 out of a possible 300, the Oshkosh High School corn judging team nosed out victor in a close contest wth the Viroqua team, which scored 262. By winning the trophy two years in succession Oshkosh takes permanent possession. The banner for second place goes to Viroqua.

Besides the above schools, Oregon, Belleville, Marshall, and Mazomanie competed. The winning teams are Oshkosh, T. G. Brown (coach), Howard Wood, Orin Wesenberg, Milton Cowan; Viroqua, R. A. Power (coach), Henry Harris, Gerhardt Monson, Earl Sheldon.

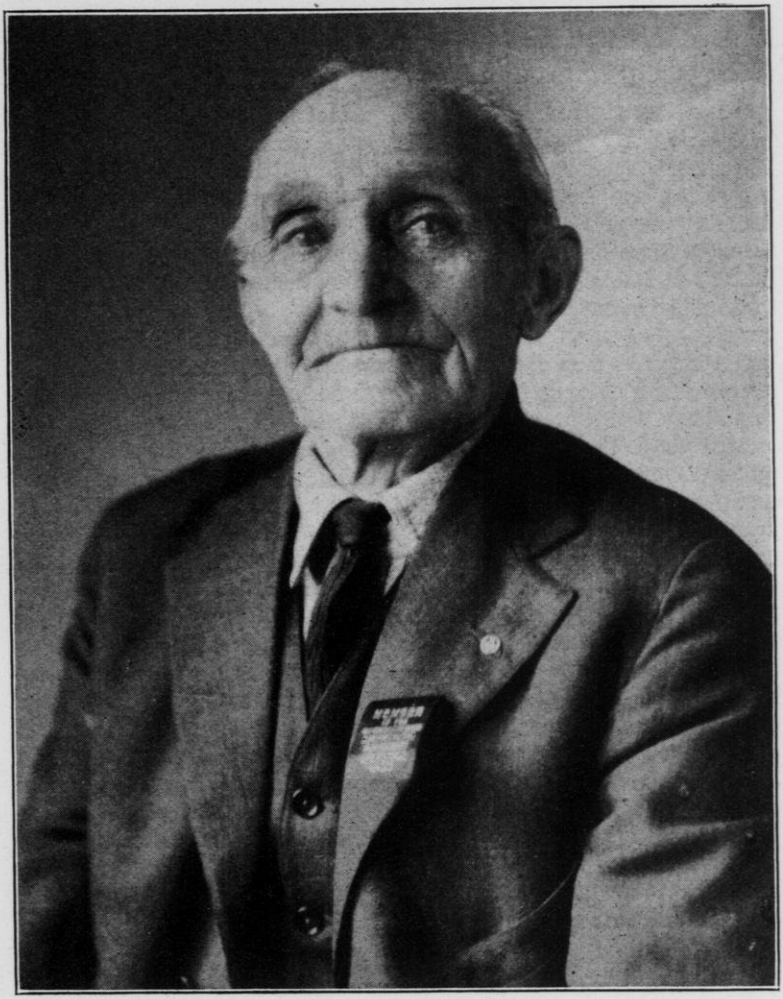
The ten high individual contestants are:

	Name	Score	Premiums
1.	Howard Wood, Oshkosh.....	92	$8.00
2.	Henry Harris, Viroqua.....	91.6	6.00
3.	Fred Frentz, Oshkosh.....	91.4	4.00
4.	Roman Schwartz, Oshkosh.....	91.0	3.00
5.	Oren Wesenberg, Oshkosh.....	91.0	2.00
6.	Clarence Jackson, Belleville...	90.0	1.00
7.	William Keene, Oshkosh.....	89.6	10 lbs. pure bred seed corn
8.	Ward Rasmussen, Oshkosh....	89.0	10 lbs. pure bred seed corn
9.	John Ryf, Jr., Oshkosh.....	88.6	10 lbs. pure bred seed corn
10.	Arthur Nygaard, Oregon.....	88.6	10 lbs. pure bred seed corn

La Crosse County Order Wins Trophy

That the County Order Trophy would stay in competition another year was decided when La Crosse county outscored her nearest competitor, Brown county, at the State Grain Show. The scores were 151 and 127 points respectively. Dodge with 113, Marathon 81, Jefferson 56, Shawano and Milwaukee with 40 each, came in the above order.

This trophy, which is awarded annually to the county winning the highest number of points at the State Grain Show, has been won twice by La Crosse county and twice by Brown county. As it must be won three times to become the permanent possession of the winner, these two counties are already planning their campaigns for a large showing of top quality exhibits in the effort to win the cup permanently. Will one of the counties newer in the game play "dark horse" and upset the plans of both La Crosse and Brown?



JIPPA WIELINGA

Jippa Wielinga Honored

On January 30, Jippa Wielinga, together with four other agricultural workers, received a diploma from the University recognizing him for his services to agriculture. This diploma is awarded to those who distinguish themselves by outstanding public service in the agricultural field, and it is a matter of pride to us that Jippa's work has been so largely accomplished through the Experiment Association in promoting better farm

crops and better farming. The following account from the University explains why Jippa was selected as one of those to be honored:

It is not fertility of soil on his farm that brought to Jippa Wielinga, of Midway, the coveted distinction of a place on the University of Wisconsin's honor roll. It is true that on his farm Mr. Wielinga grew the corn that has made him and his strain of pedigreed grain famous wherever corn-growers meet. But there are thousands of farms in Wisconsin more fertile than his. There are thousands much better adapted to growing corn. It is the fertility of Jippa Wielinga's brain and the enduring persistence of his will, that makes him justly famous. The world has beaten a path to his door because he thought and labored in and out of season to make his farm, poor though it was to begin with, as near as it could come to an example of perfection. Mr. Wielinga did not start farming to become famous. He started out to do the best job of farming he could in the situation in which he happened to be placed. And because by study and experiment, and most of all by the hardest kind of toil, he made a conspicuous success of his job, his fame spread. First his neighbors, then the whole county and finally the state, came to wonder at his accomplishment. His achievement is not the citation by the university. That is merely the formal recognition of it. The important thing that Mr. Wielinga has done is to demonstrate the power of honest human effort. In theory he has done no more than any other man in the state could do. Practically he has done more than any but a few leaders can ever hope to accomplish, because most of us are not Jippa Wielingas. Most of us will not work and think as hard as he did. But his is an inspiring example. The value of men like Jippa Wielinga to a community is that they show what men can do if they try, and by simply being what they are stimulate everyone with whom they come in contact to increase his efforts. They do more for their fellow men than nine-tenths of the statesmen and soldiers who shine in the limelight.

The Two Acre Corn Yield Contest

That high yields of corn are not merely a matter of luck or chance is shown by the fact that of the seven members of last year's corn contest who passed the 100 bushel mark, five were already members of the "100 Bushel Club." Some of these have made their 100 bushels or over for several years. The two new members who made the club are Albert Frei, Markesan, and A. O. Popp, Jefferson.

Mr. M. J. Strunk, of Jefferson, Jefferson county, again takes high honors, with 163.5 bushels per acre, with Golden Glow corn. This is a little short of his previous year's record, but it is nevertheless an occasion for congratulation. Consistently high yields such as this show that we have with us continually the possibilities and that all

that is necessary is for us to bring together the factors in the right combination. And what a triumph for our old favorite, the Pure Bred Golden Glow Corn! The next fourteen places are: Tom Moore, Green Bay, Brown county, Golden Glow, 156.9 bu. per acre; Jippa Wielinga, Midway, La Crosse, Golden Glow, 148.8; Jacobsen Bros., Green Bay. Brown, Golden Glow, 123.8; Albert Frei, Markesan, Green Lake, Silver King, 103.0; A. O. Popp, Jefferson, Jefferson, Golden Glow, 102.1; Roger Raven, Bloomer, Chippewa, Golden Glow, 98.1; Torger Johnson, Genoa, Vernon, Golden Glow, 97.0; Adolph Thompson, Black River Falls, Jackson, Golden Glow, 96.6; Herman Berndt, West DePere, Brown, Golden Glow, 94.9; Guy Theige, Westby, Vernon, Golden Glow, 93.8; Gordon Clark, West Salem, La Crosse, Golden Glow, 90.5; Clyde Huschka, Viroqua, Vernon, Golden Glow, 89.4; Oscar Theige, Westby, Vernon, Golden Glow, 88.8; George Wheelock, Green Bay, Brown, Golden Glow, 86.8.

The 100 Bushels Per Acre Corn Club

Last year's results bring the membership of our 100 Bushel Club up to sixteen. We want some more members. How many Association members can meet the requirements by raising 100 bushels per acre in our annual Two Acre Corn Yield Contest? It's worth trying for. The members with their highest yields are:

M. J. Strunk, Ft. Atkinson, Golden Glow	171.6
Jippa Wielinga, Midway, Golden Glow	138.8
Jacobsen Bros., Green Bay, Golden Glow	138
Fred Hubbard, Morrisonville, Golden Glow	128.1
Jos. Schneider, New Franken, Golden Glow	120
John Bendel, Stoddard, Silver King	117.4
Geo. F. Blahnick, Algoma, Golden Glow	116
Geo. Wheelock, Green Bay, Golden Glow	115.5
Roman Muskavitch, Shawano, Golden Glow	111
Tom Moore, Green Bay, Golden Glow	110.4
Godfried Huppert, Diamond Bluff, Golden Glow	108
Wm. R. Berger, Oconto Falls, Golden Glow	107.1
Robert Hall, Lena, Golden Glow	103.3
P. V. Becker, Galesville, Golden Glow	103
Albert Frei, Markesan, Silver King	103
A. O. Popp, Jefferson, Golden Glow	102.1

Average Yields Per Acre of the Pure Bred and Pedigree Grain—1922

As Reported by Experiment Association Members

Pedigree Barley	28.2
Oats—Pedigree 1	51.6
Pedigree 5	43.2
Pedigree 7	49.4
Pedigree Rye	16.8
Pedigree Winter Wheat	22.7
Marquis Spring Wheat	14.4
No. 7 Corn (Silver King)	53.9
No. 12 Corn (Golden Glow)	53.5

Fourth Annual Meeting of the International Crop Improvement Association

Chicago, Ill., December 4, 1922.

One important service which the International Crop Improvement Association can render the farm crops interests of the country was demonstrated at this meeting when a senate bill entitled "Federal Seed Registration Act" was brought up for discussion. This was a proposed law which would relate to grading and registration of seed grains, a subject upon which the various state associations have put a great deal of study and effort. By discussing this bill at the annual meeting where all the associations were represented, the best judgment of the authorities on the subject was arrived at and put in the hands of those responsible for making the laws.

Proposed rules and standards were presented by committees on certification of corn and soybeans, the object being to enable the associations to adopt uniform grades for seed which would have a common meaning over the whole country.

President J. S. Cutler reviewed the growth and progress of the International Crop Improvement Association, and very interesting talks were given by Professor Fred Grifee, of Minnesota, on Recent Developments in Plant Breeding, and Professor J. F. Cox, of Michigan, on some of the work of the Michigan Experiment Station in breeding of pure bred grains.

The officers elected for the ensuing year are:

President, J. W. Nicolson, East Lansing, Michigan.
First Vice President, L. H. Newman, Ottawa, Canada.
Second Vice President, A. J. Ogaard, Bozeman, Montana.
Third Vice President, W. C. Wysor, Blacksburg, Virginia.
Secretary, J. G. Hackleman, Urbana, Illinois.

Merchandising, the Farmer's Way Out

Twenty Years of Merchandising of Pure Bred Grains

R. A. MOORE

The marketing of pure bred seeds through the Experiment Association covers practically a quarter of a century. During this long period of time a marketing system has been built up which handles Wisconsin's pure bred seeds in so systematic a way that it seems at the present time when we are marketing from one to two million dollars worth of seed and fiber products per year that we are apparently putting forth no more efforts than we were in former years when we marketed only a few thousand dollars worth. There are a few fundamental principles upon which this whole system of marketing is based and where these principles are properly adhered to, wonderful achievements have been accomplished.

It was fully realized when the grain breeding work was started that unless there was a market for such seed that it would soon dwindle into insignificance. Consequently we worked as hard upon the marketing side of the proposition as we did upon the breeding side and carried the two hand in hand through this long series of years. We find in quality and appearance it is absolutely necessary to have an article superior to any other thing of the same kind if we are going to get a ready market for it, consequently, Wisconsin pure bred seeds were bred to win the race and the marvelous yields that we were able to secure over and above the common stock from which we bred far exceeded our fondest expectation. This we regard as the first great essential in marketing. That is, to have something that stands pre-eminently far above any article of the same kind which may or may not be on the general market.

Wisconsin corn was bred to practically double the yield per acre. After six years, dissemination of the Wisconsin pure bred varieties of corn, Wisconsin grew twenty-five million bushels of corn over and above what she did before such dissemination on the same area of ground. This added to the state 25,000,000 dollars per year with little extra effort on the part of the farmers to secure it. In order to make this wide dissemination we found it necessary to interest the young people and in a single year we had 29,800 boys, and in some instances, girls growing the pure bred strains of corn. From our tests at the college during the breeding period, we knew we had a superior article that it did not need words or a printed page to tell the farmer of its superiority. All that was necessary was to try it out with any corn that he had on the farm. We knew it would merely double the yield, both silage and corn per acre which undoubtedly would convince any farmer without being persuaded in any other way.

When we found that we had bred a barley that would give in a five-year test with 1,550 members of the Experiment Association, a yield of nine bushels more per acre than the best barleys grown in comparison, we knew we had a barley that was capable of winning the race and the only thing necessary was to have a broad dissemination made of the same. This work has gone on until 98 per cent of all the barley now grown in Wisconsin came from a single berry. One berry out of many hundreds of thousand kernels of barley that were bred to win the race.

The second great essential in marketing is to give the article an appropriate name and make that name stand for quality, yield, and other favorable characteristics. Thus we have the Golden Glow corn noted for its beautiful color of both corn and plant with the inventory No. 12. This Golden Glow or No. 12 corn has become noted far and near not only throughout our state, but throughout our Nation. Even the children know what the No. 12 corn is. The same thing is true with the No. 7 or Silver King, that beautiful corn that was bred especially for silage and is noted for its wonderful leafiness and ability to produce more silage than any other corn plant. The large percentage also of seed ears to the general yield makes this No. 7 corn a corn

which is almost worshipped by many of our farmers, thus the Wisconsin No. 7 is known far and near.

A few years ago, the speaker had an opportunity of judging at one of the great corn shows at Chatham, in eastern Canada, and while the building was decorated with thousands of British flags, yet, the words "Wisconsin No. 7" showed above over five hundred samples of corn in various parts of the large exhibit room showed that our

The Experiment Association Trade Mark Means Quality and Dependability.

Canadian brothers had received the inspiration which our own Wisconsin people have received that there is considerable attached to a name that applies to seed providing it has been bred to win the race. Our Canadian brothers have learned the reason and are growing the Wisconsin No. 7 corn fully as prominently in the Province of Ontario as we are in Wisconsin.

A few years ago the Port of Odessa received large shipments of Wisconsin No. 12 corn, the beautiful Golden Glow. Those farmers living north of the Black Sea in Russia had become acquainted with Wisconsin No. 12 corn and introduced it extensively in their section of Russia, and the word No. 12 has become known throughout that particular district.

Also we find in far away Egypt during the past two years orders have been received for the Wisconsin No. 7 and Wisconsin No. 12 corn. Consqeuently we feel that this corn has won its way in Egypt throughout the Valley of the Nile. The reason for this is because in tests carried on with hundreds of varieties of corn that the Wisconsin No. 7 and No. 12 which were bred to win the race showed their superior characteristics in all trials and competition with other varieties.

Without the essentials of quality and name stamped upon the corn our marketing system would fall flat. It is only by the superiority of the article that we have to put on the market that we are able to control such markets to the great extent that we are now doing. The World at the present time calls for the man or woman of superior character that can put across a proposition. In other words, they want the man or woman that can win the race so consequently we desire that superiority in our farm seeds. Superiority is one of the prime characteristics with a name which stands out boldly for successful marketing.

The third great essential is quantity. If we were to attempt to grow these seeds merely by the experiment station or by a few individuals our whole marketing system would fall flat. We have to grow these seeds in million bushel lots so that parties can receive them in almost any quantity they desire. This has led to volume in marketing and has caused the sales to run into the million dollar class. This third great requisite is probably one of the chief requisites because the other two would go by the board if it were not for this system of growing which enables great quantities of high quality seed to be placed upon the market. This was one of the essentials which led to the development of the Wisconsin Experiment Association and also the marketing in large quantities led to the further organization of our county organizations so that large orders could be filled directly through the secretary of the county association. Honesty of purpose is another great essential in putting up seeds. If a single member should fall down in quality and attempt to market his seeds that were not up to the real standard the whole organization would be injured and while it would not only injure his reputation, it would hurt thousands of members of the Association that are in the same line of business. Consequently great stress has been placed upon this particular requisite and everything within the power of the Wisconsin Experiment Association and College of Agriculture has been done to educate the members to these high ideals.

Realizing that the pure bred seed proposition would soon go by the wayside if we did not have select growers who would probably take care of these highly bred seeds, we wrote in our constitution at the beginning that no one that had not taken work in some College of Agriculture would be eligible to membership in the Association. This was one act which gave the seed selling work of Wisconsin an impetus which it has been able to maintain through a long series of years. We feel that it is largely through the intelligence of the grower and

his honesty of purpose that has made the pure bred seeds famous throughout the world.

The fourth great essential is the advertising of the seed so as to call attention to parties that have not had an opportunity of testing the pure bred seeds. The Wisconsin Experiment Association has several methods of advertising, one which can be readily seen in the Agricultural Pavilion is the Annual Grain Exposition, where hundreds of members of the Association who are specializing in the growing of pure bred seeds come together to compete in this great arena. It is here that the members have an opportunity of getting a mental picture of the very finest seed stock which can be produced. They have an opportunity of competing with their peers and setting a fixed standard for improvement on their own seed. Thousands of farmers have an opportunity of seeing possibly for the first time pure bred seeds and can realize their superiority over the common scrub seeds which were formerly grown on their home farms.

Marketing Booth at State Grain Show.

Another special line of advertising has been the pure bred seed grain trains which have been run on several occasions on the various railroad lines throughout our state. Cars were filled with pure bred grains both in the sheaf and threshed. Parties would have an opportunity to visit these trains and hear talks upon the superiority of these grains and the desirability of growing them upon their farms. In this way whole communities have gone into growing certain varieties of corn, barley, oats, wheat, soybeans, etc.

Another great line of effort is the competitive work at County, State, and International Shows. Here the individual has an opportunity of seeing his grain compared with other grains of the same variety and parties from distant states have had an opportunity of looking over our grains which were bred to win the race.

The next great line of effort has been the announcement of the growing of these seeds through the Agricultural press, the daily press, and the local weekly press. The Wisconsin Experiment Association has no funds allowed it to spend for advertising, so consequently has to rely upon the generosity of the press for the notices given concerning the growing of pure bred seeds. We wish to state at this time that the press has been very generous and are always willing to write up the stories relating to the results acquired with pure bred seeds.

In closing, I wish to state that the pure bred seeds have not only been instrumental in bringing to the farm more money but with this bringing of more funds it has also brought a desirability of staying upon the farm and there is no one factor which I am aware of at the present time that has done more to settle this greatest of all questions which is now before the American public, "How to Keep the Boy Upon the Farm."

At the initial stage when the breeding work was started in 1898, this was the essential thing in view. Many young men were coming to the college against the wisdom of their friends in the neighborhood and often against the best judgment of their fathers and mothers. They went back almost as a laughing stock to the farm. Our farmers in those days readily realized that it was very necessary for a doctor to be educated—also for a lawyer, minister, or any professional man, but they did have a notion that any stupid dolt could become a farmer and that it was not necessary for a man to attend college in order to become a farmer. Therefore, it was a duty of the College of Agriculture to give the young man who attended an opportunity that was above that of the young man that did not attend the college. This was one of the leading factors that started the development of pure bred seeds on the university farm and in doing so, the parties connected "built better than they knew."

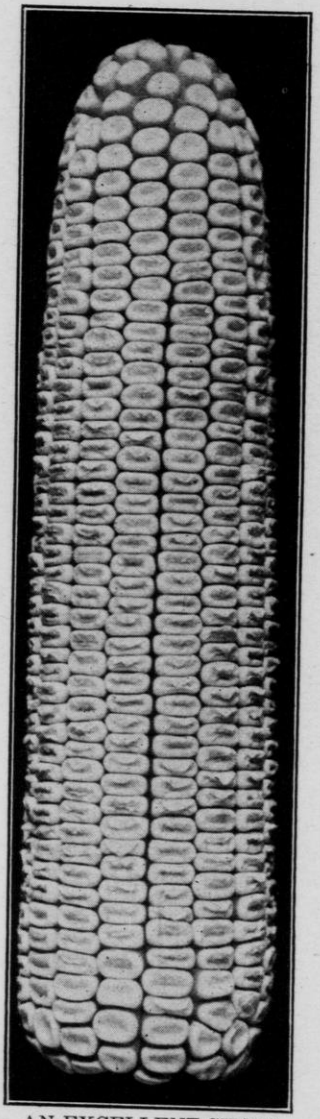
Twenty-five years ago, no one for a moment, thought that pure bred seeds in 1923 would be going to practically all grain growing countries in the world. There is another important factor which must not be lost sight of which was taken up at the time when the large number of young people were thrown into the club work and continued in the work for over fifteen years and many are in the work today which resulted in the marked influence that the dealing with beautiful pure bred seeds has upon the human being. We have every reason to believe that the wide dissemination and the handling of pure bred seeds and pure bred stock have had a great influence upon the making of pure bred boys and girls in the state.

We further feel, through the growing of these pure bred seeds for which the grower receives practically twice the price that the common grains would bring on the market that it will have a tendency to bring to the grower an income which is so essential to build up the dear old farm home so it becomes the most beautiful place on earth to live.

Preparing Field Crops for Exhibit

E. D. HOLDEN

Each year hundreds of Wisconsin exhibitors, young and old, show grain and forage crops at the fairs and expositions. Hundreds more need only a little encouragement and guidance to draw them into this fascinating, instructive, and generally profitable undertaking. The young folks especially go into it with eagerness and enthusiasm, and reap a lasting benefit.



AN EXCELLENT SHOW EAR

To aid our present and future exhibitors in using their material and skill most effectively in preparing exhibits, the following suggestions are given:

An exhibit, whether it be an ear of corn, a sheaf of forage, or a sample of threshed grain, should represent as nearly as possible your ideal. No set of instructions will guide you so well as your own judgment after you have studied carefully the qualities which are needed in the particular kind of grain or forage to make it serve its purpose most effectively. Through study, observation, and experience correct ideals are gradually built up.

As in all other competition, the object should be wholesome, good natured and sportsmanlike rivalry. An exhibit should represent the *ability and skill of the exhibitor* in growing his crops and preparing them for show. With this in mind the exhibitor should follow the letter and spirit of the rules and regulations. Any practice which takes unfair advantage of a competitor, even though it is not detected, is dishonest, and mars the spirit of sportsmanship which is the life and soul of friendly competition.

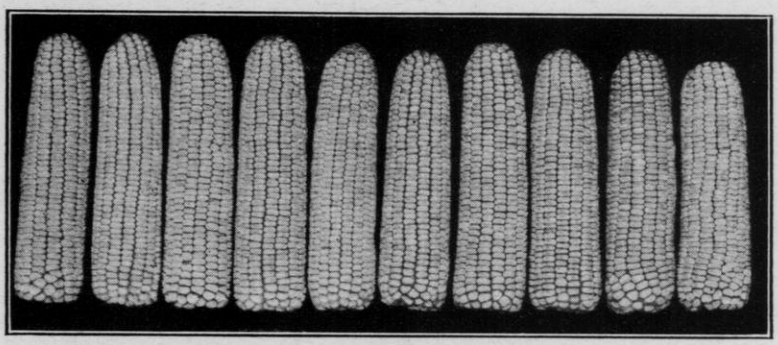
Good Crops The First Essential

In planning for exhibits of field crops begin before planting time. The best exhibit material can be secured only from good, vigorous crops, free from disease and weeds. This

means planting pure, clean seed of the best varieties. This is half the battle in preparing exhibits. Because of their superiority most of the fairs and shows place the major part of the premium money on the pure bred and pedigreed varieties. It is to the advantage of the exhibitor, not only in preparing exhibits but also in securing high yield and quality in his crops, to grow these improved varieties.

CORN

The best exhibit of corn is the one most desirable for seed purposes. It should be of a type and variety suited to the locality for which it is shown, and should consist of sound, undamaged ears. It should be true to its variety in color, size, and shape of ears and kernels, and be free from mixture. The ears and kernels should be as uniform as possible in all respects. Size, shape and uniformity of kernels can be determined satisfactorily only be removing for inspection one or two kernels from

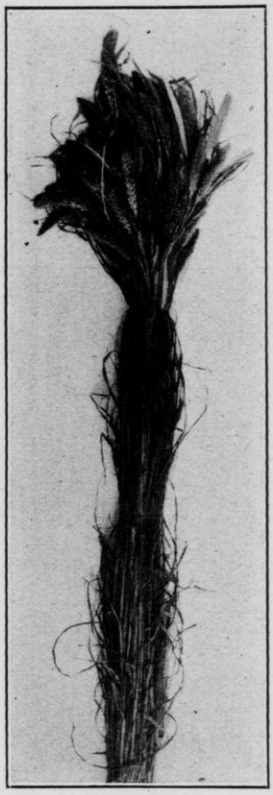


A GOOD TEN EAR SAMPLE

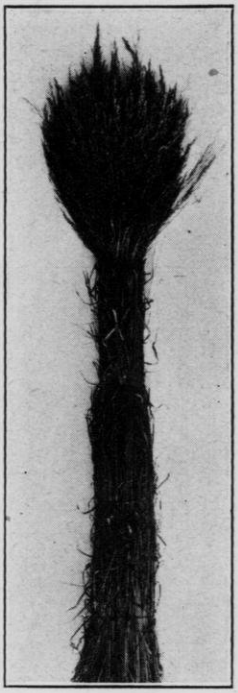
the middle of each ear. Many exhibitors fail to do this because they fear that it will injure the appearance of the sample and that it will be discriminated against in judging. This is a mistaken impression, as many judges, especially at the larger shows and in close competition, remove kerne's for this purpose, and if they find one or two kernels missing from the middle of each ear they know that they are removed for a legitimate purpose.

The most certain method of securing a good sample is to pick out of the field, when the ears are mature, a quantity of the best seed ears you can find. Hang these to cure under cover where there is good circulation of warm air. When the ears are thoroughly dry select the ears which will together make the most uniform sample of good seed ears. More detailed information on selection with a description of the standard varieties in Wisconsin is found in the circular on corn judging, published by the agricultural college.

TIMOTHY



MILLET



RED TOP

SUDAN GRASS

SHEAVES AND BUNDLES

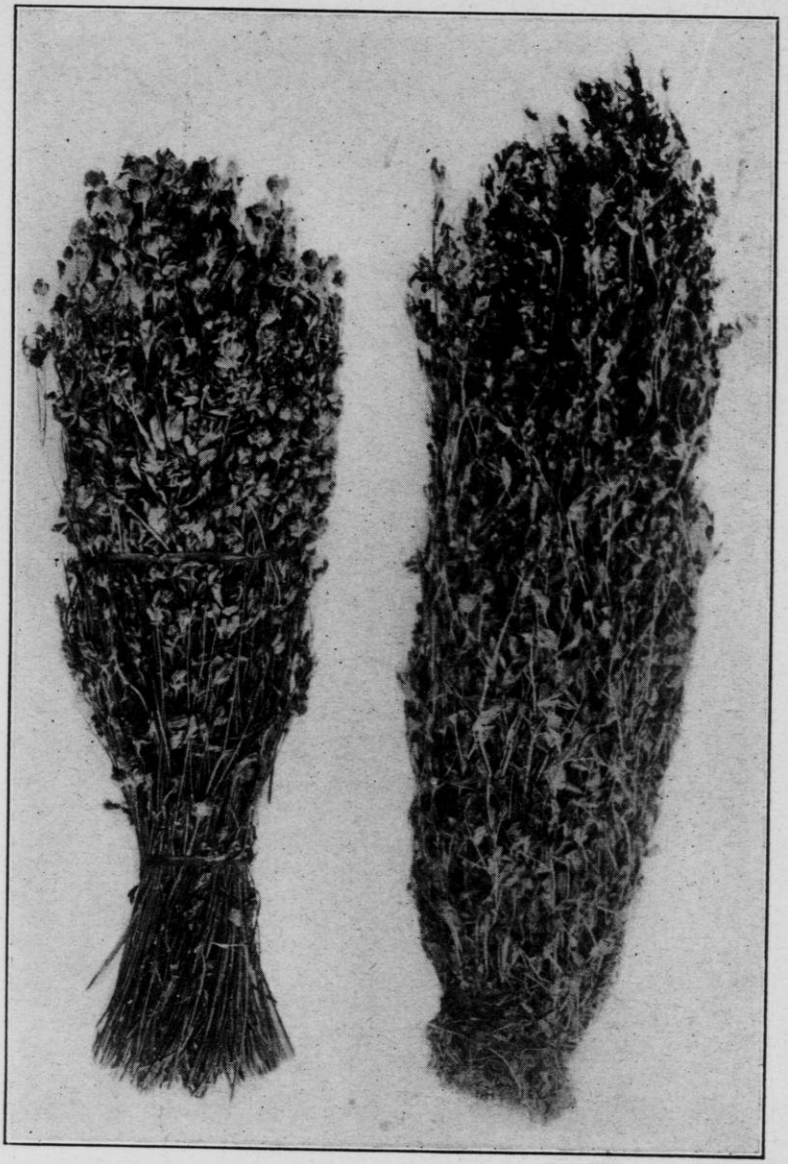
General Suggestions For Sheaf Samples

The aim in showing sheaves and bundles is to represent the crop by displaying in an attractive way a few of the best plants. The best display is made by taking the plants at the right time, curing, fitting, and binding them together in such a way that they will represent the crop to the best advantage for the particular purpose for which it is grown. Store sheaves and bundles by hanging heads down, to preserve the shape and compactness of the heads. Pleasing size and proportions and neat appearance help to set off the quality of the material most effectively.

Grasses
Clovers
Alfalfa
Vetch
Soy Beans
Field Peas

Collect tall, healthy plants having small or medium-sized stems and an abundance of leaves, and cure slowly by spreading out to dry in a rather dark room or shady place where there is circulation of air. If piled too thickly the leaves may turn yellow or may mould. Turning will prevent this. With grasses such as timothy, blue grass, and red top, choose large heads and long stems *and do not strip off the leaves.* Grasses are grown primarily for forage, and an abundance of leaves is essential to high quality. Tie in bundles three or more inches in diameter at the center and square the butts. With clovers, soy beans, etc., the dry leaves may fall off in handling. This may be prevented by covering the material with a damp cloth for a short time before making up the sheaves. Put up in neat bundles six or more inches in diameter at the center, and tie with strong cord.

Collect grasses, clovers, and vetch when in blossom, alfalfa when just beginning to bloom. Cut soy beans and field peas for hay sheaves when the



WELL CONSTRUCTED BUNDLES OF RED CLOVER AND FIELD PEAS

plants are well podded but the seeds immature, and the leaves still fresh and green.

Sheaf Grains At harvest time select several good bundles of oats, barley, wheat, and rye, or better still, cut with a sickle a quantity of the best plants with large ripe heads and clean bright straw, and cure these where they will not be exposed to rain or dew. They may be spread out on the floor or on a row of slats, so that the air can circulate freely. Exposure to the sunlight improves the appearance by bleaching. Strip off all the leaves before the stems become dry and brittle, bind together securely in neat bundles three or more inches in diameter at the center and square the butts. Shattering can be avoided by making up the sheaves in damp weather.

For bundle of mature soy beans or field peas select plants having a large number of uniform ripe pods with a good color. Tie in bundles six or more inches in diameter.

Flax Select plants of even length, preferably about two feet long, with a large number of bolls, when most of the bolls are ripe and when practically all of the leaves are shed. Strip off the leaves and arrange the plants so that the heads are nearly even. The butts should be squared. Tie the bundles with one string just below the seed branches, one near the butt end and one near the middle. Bundles should not be less than five inches in diameter at the head.

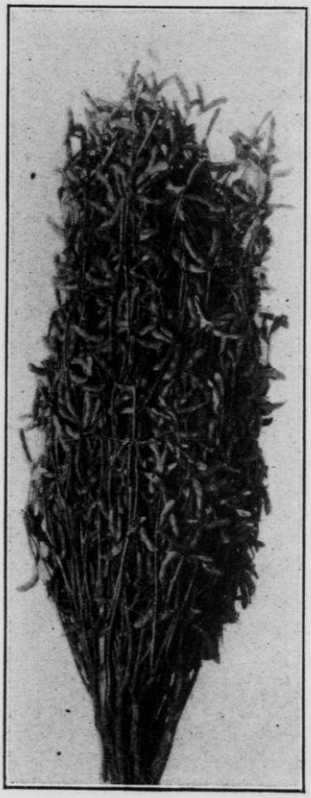
Hemp Select stalks that are uniform in size, fine, slender, and free from branches. Hemp is grown for the fiber that is in the bark, and the best fiber comes from long, slender plants, not from those that are coarse, woody, and branching. The ideal size is a little larger than a lead pencil, and the length should be from seven to nine feet. Harvest when the plants are well along in the blossom stage but before any considerable amount of seed is formed. Strip off the leaves and tie securely in three or four places in a bundle of six or more inches in diameter.

Sorghum Select stalks of uniform size, large, straight, and free of branches. Do not strip off the leaves. Harvest when the seed is ripe. This is indicated in the amber varieties by the seed coverings being black. The heads are important, and should show that the strain is pure and free from mixture with other kinds of sorghum. Arrange the plants in a bundle not less than six inches in diameter and tie securely. Square the butt end.

Corn On The Stalk Stalks of corn should be of the type from which you would select seed ears. They should be uniform in height and size and should have but one ear. Ears should be three to three and one-half feet from butt of stalks. Shanks should be uniform in length and just long enough so that the ears droop over, too long or too short shanks being objectionable. Ears should be good seed type, uniform, mature, and free from mixture.

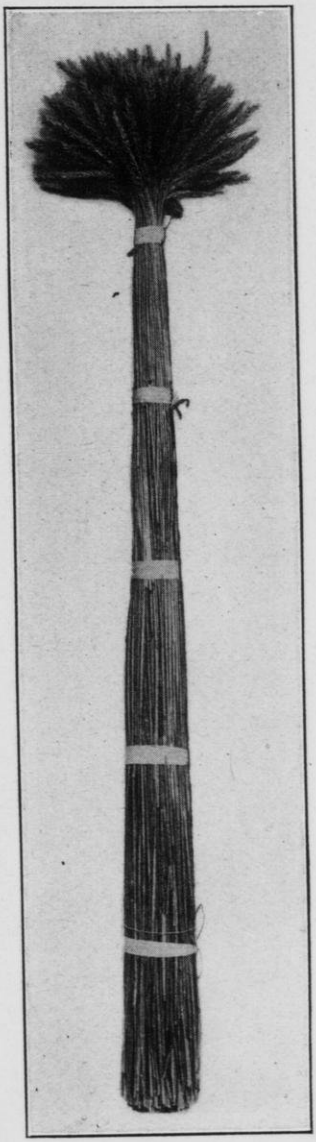
Baled Hay Cut the samples at the same time the hay crop is cut. With grasses and clover this is when the crop is in full bloom, with alfalfa, when just starting to bloom. Cure with as little exposure as possible to direct sunlight and away from rain and dew,

SOYBEAN HAY



SOYBEANS FOR SEED

for sunlight and moisture discolor the hay. If the hay is put into cocks as soon as sufficiently dry, the inside of the cocks will be protected and the natural rich color preserved. Sufficient hay for the sample may be cured under cover, with a layer of marsh hay over it to keep it from bleaching. When thoroughly cured bale the hay, preferably on a damp day, and store the bales in a dark, dry place. Do not press the bale too tight or the heads and leaves may be broken off. A bale weighing at least fifty pounds is the rule with most fairs and shows.



SHEAF OF RYE

THRESHED SAMPLES

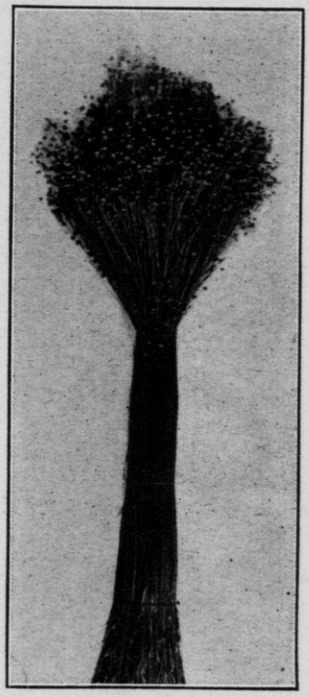
General Suggestions For Threshed Samples Exhibits of threshed seeds are usually judged for their fitness for seed purposes, and with this in mind the essential points in preparing the samples will readily suggest themselves. The aim is to fit samples of plump, mature seed, of uniform size and good color, free from mixture with other seeds and foreign material, and free from disease or damage. The best samples are prepared by harvesting at the right time, curing in such a manner as to prevent damage by weathering, and removing discolored, damaged, or otherwise undesirable kernels with the fanning mill and by hand.

Cure, Under Cover, Material For Threshed Samples Rain and weathering after harvest discolor seeds of all kinds if the shocks or stacks are in the open. To be certain of retaining the best color and condition of the seeds a good plan is to cure under cover sufficient amounts of the various crops to provide for the samples, and thresh these separately. This applies to grains, clover and grass seeds, beans and peas; in fact, all seeds for threshed samples.

Threshed Grains The first step is to get plump grain of good color. It is worth while to cure a few bundles under cover for this pur-

WELL CONSTRUCTED SHEAVES OF OATS, BEARDLESS AND BEARDED WHEAT

pose. Thorough treatment with the fanning mill will blow out the light seeds, chaff, etc. The weight of the sample depends greatly upon the amount of beards, tips, and chaff which adhere to the kernels. Close threshing, or any other treatment for removing this light material should not be overdone, for if the tips of oats or barley are rubbed off so that the meat of the kernels is exposed, the sample will be discounted in judging. Pick out by hand discolored or otherwise bad kernels.



SHEAF OF FLAX

Clovers Alfalfa It is well to go through part of the field at blossoming time and remove all weeds and other foreign plants. This will aid in securing a pure sample. Allow the seed to become well ripened before harvesting. Cleaning thoroughly with the fanning mill will take out small, shrunken seeds and dirt. Putting the seed through one set of small mesh screens to take out the small seeds and then through a set of larger mesh to remove the extra large ones will give a sample of very uniform size.

Timothy Take care in threshing not to remove the hulls from the seeds, as hulled seeds are discriminated against severely and are very difficult to remove. The fanning mill will remove light seeds and chaffy material.

Beans Soy Beans Peas Cracked and broken kernels can be largely avoided by careful threshing. Secure bright, plump seed, uniform in size and color, and pick out broken and off-colored seeds. Inspect samples carefully for mixture of varieties, shown by differences in color or marking. Mixture occurs very often in soy beans and peas.

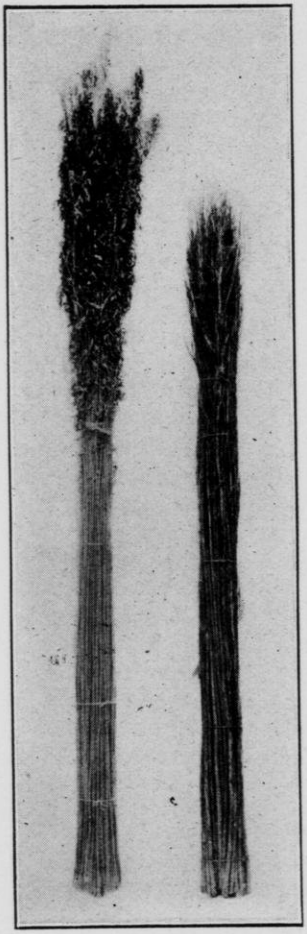
Sorghum Sudan Grass Harvest when the seed is thoroughly ripe and store under cover. With sorghum take only heads which are true to type and free from mixture. After threshing, treatment with the fanning mill will give a good sample of plump seed.

Flax Harvest when all the bolls are well ripened to avoid immature seed and secure uniform size and color. If there are immature shrunken seeds in the sample the fanning mill will help. Work for clean seed of uniform size and bright color.

PACKING AND SHIPPING EXHIBITS

Pack and Label Well When exhibits are to be shown at a distance, as at the State Fair, Grain Show, and the International Hay and Grain Show, they are usually shipped by express or parcel post. To be sure that the samples arrive in good condition it is essential that they be packed correctly, well labeled, and plainly addressed.

Pack corn in wooden boxes, each ear wrapped separately and the sample packed tight with plenty of wadded paper or excelsior. Each ear may be numbered in the order in which they should be arranged at the show. If more than one sample is packed in a box, separate them and label each sample so they will not become mixed. Label each sample and the outside of the box with name and address of exhibitor and kind of exhibit. Plenty of labeling saves confusion and mistakes.



BUNDLE NATURAL AND RETTED-HEMP STALKS

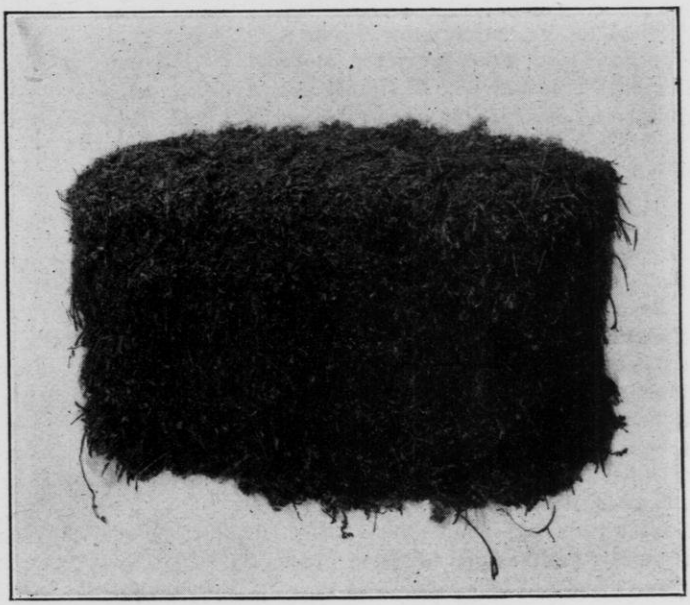
Ship threshed samples in small sacks with one tag inside and one outside of each sack giving name and address of exhibitor and kind of exhibit. Do not close sacks by sewing, or by knotting the open end. Such sacks are difficult to open, and where a large number of samples must be unpacked in a short time knotted or sewed sacks are usually cut open, spoiling them for future use. Tie sacks securely with stout cord. Several samples may be shipped together in a large sack. **Do not ship threshed samples in boxes.**

Pack sheaf samples snugly in a crate or box, each sheaf or bundle wrapped well in paper and labeled.

Hay exhibits should be wrapped with burlap and shipped in a box or crate. Do not place excelsior in contact with hay.

Have Entries and Exhibits In On Time In running a large show, such as the State Fair or State Grain Show, it is required that entries be made in advance so that the records can be made up and tags prepared, otherwise this would have to be done after the samples arrive, and with the multitude of details which have to be looked after at this time an impossible confusion would arise. Samples arriving after the specified time also cause difficulties and confusion. If all our exhibitors realized the necessity of systematic work in managing these shows they would take particular pains to have entries and exhibits in at the time stated in the premium list. Exhibits should always be sent prepaid; never "collect."

There are numerous opportunities for exhibiting field crops within the reach of everybody. From the smallest school and community fairs through the list to the great International Hay and Grain Show comes the call to show. Many of our best exhibitors who have made names and reputations for themselves started only a few years ago, many of them as boys, and their enthusiasm and careful work have brought them reward and recognition. You, too, can win your share of pleasure and profit by taking part. Here are some of your opportunities: School and Community Fairs, County Seed Growers' Association Grain Show, State Fair, State Grain Show, and International Hay and Grain Show. Information about the larger shows will be gladly furnished by the secretary of the Wisconsin Experiment Association, Madison, Wisconsin.



50 POUND BALE OF ALFALFA HAY

Report of the Business Meeting

Monday, January 29, 1923

Meeting called to order and president's address read by President C. S. Ristow.

Report of secretary read by R. A. Moore.

Moved and carried that the chairman appoint a committee on nominations—P. W. Jones, W. E. Spreiter, Jos. A. Brunker, appointed.

Financial report read by Secretary R. A. Moore and adopted.

Address, President Alfalfa Order, S. P. Markle.

Report of secretary, and financial report, L. F. Graber.

Report of nominating committee.

For Experiment Association

President—Tom Campion, Wauwatosa.
Vice President—Elmer Biddick, Livingston.
Secretary—R. A. Moore, Madison.
Treasurer—J. Emmett Brunker, Ridgeway.

For Alfalfa Order

President—Wm. Basse, Milwaukee.
Vice President—Fred Dettwiler, Monroe.
Secretary-Treasurer—L. F. Graber, Madison.

Moved and carried that report be accepted and nominees declared elected.

Motion to adjourn carried.

MEETING OF EXECUTIVE COMMITTEE

An informal meeting of the executive committee was called immediately after the business meeting to discuss activities and budget for the coming year. Secretary Moore discussed the situation and last year's budget was read. In discussion of the Grain Show, President Campion outlined a plan for enlarging and backing the show financially by getting the counties to underwrite a certain number of exhibits and a certain sum of money for premiums.

It was suggested that we have more money and more classes for peas in next premium list, and that we have class for Wisconsin grown alfalfa seed.

The part the Experiment Association should take and the amount of money it could afford to spend in the Wisconsin Products Exposition was discussed. The aims and purpose of the exposition met with favor.

An Experiment Association booth at the State Fair was favored.

Promotion of county order work was discussed. It was suggested that underwriting of grain show by counties would help, and that combination membership in county order, alfalfa order, and Experiment Association might promote work.

Motion to adjourn carried.

SECRETARY'S FINANCIAL REPORT

R. A. Moore, Secretary, reported on the use and condition of State and Association funds as follows:

Balance in State Treasury, January 20, 1922	$ 3,188.57
State Appropriation, July 1, 1922	5,000.00
Receipts, January 20, 1922, to January 20, 1923	1,248.51
Total	$ 9,437.08
Disbursements, January 20, 1922, to January 20, 1923	$ 6,597.98
Balance on hand, January 20, 1923	$ 2,839.10

The following expenditures are not included in the Total Disbursements of $6,597.98 due to the fact that they are not as yet entered on the Secretary of State books:

December 19, H. W. Wilson Co., New York, 1 year subscription to Agricultural Index ending January 31, 1923	$ 6.00	
December 26, State Printing Board—Printing $62.29; Paper $24.29	86.58	
Total	$92.58	$ 92.58
Balance on Hand, January 20, 1923		$ 2,746.52

Wisconsin at the International

The individual honors, so far as sweepstakes are concerned, go to J. L. Krause, of Reeseville, this year, for the best sample of soy beans of the entire show. With first, second and third in this class to our credit we can look upon this as a very successful year for our soy bean exhibitors. Our Region 2 exhibitors of oats also brought high honors to the state, and in the junior corn class you will note that our young exhibitors have taken the lead with first and second places. In some other classes we have to hand the palm to our competitors, with the reservation that we shall come back next year with the determination to offer still stronger competition. The "International" is the largest show of its kind in the world, and to win a place is a high honor. Following is a list of awards:

Corn—Region 2

10 Ears Yellow
- 22 Elmer Biddick, Livingston
- 25 Wm. M. Keenan, Jr., McFarland

10 Ears White
- 3 John Bendel, Jr., Stoddard
- 5 Joseph A. Brunker, Ridgeway
- 6 H. A. Ellingson, Stoughton
- 20 Edw. W. Streich, Jefferson
- 25 W. E. Colladay, McFarland

Single Ear
- 3 R. H. Lang, Jefferson
- 11 Frank Gasper, Rockland
- 17 Joseph A. Brunker, Ridgeway
- 18 W. E. Colladay, McFarland
- 20 Gust Guskalkson, Columbus
- 22 Clarence Rhodes, Kansasville
- 23 H. A. Ellingson, Stoughton

Junior
- 1 Percy Danks, Evansville
- 2 George Boyd, Nelson
- 5 Brayton Hagan, Clinton

Oats—Region 1

- 33 Helmer Odden, Barronett

Oats—Region 2

- 1 R. H. Kleinsmith, Onalaska
- 2 Alfred Breiwick, West Salem
- 3 Otto Wolf, La Crosse
- 5 Wolf Bros., La Crosse
- 9 Louis Hanson, Mondovi
- 13 Vollmer Bros., Hales Corners
- 14 Mrs. August Dahlberg, Frederic
- 15 J. L. Krause, Reeseville
- 17 P. W. Jones, Black River Falls
- 27 Clarence Rhodes, Kansasville
- 28 Frank Rhodes, Kansasville
- 31 R. H. Lang, Jefferson
- 34 H. M. Krause, Reeseville
- 35 Freeman Conrad, West Allis

Barley (Six Row)

6 R. H. Kleinsmith, Onalaska
10 W. J. Steinhoff, Platteville
12 Ed. Peters, La Crosse
13 Otto Wolf, La Crosse
14 Wolf Bros., La Crosse

Wheat—Hard Red Winter

24 A. H. Thompson, Black River Falls
25 A. Selle, Thiensville

Rye

15 A. J. Johnson, Clintonville
29 A. R. Potts, Waupaca

Soy Beans

Sweepstakes of Show—
J. L. Krause, Reeseville
1 J. L. Krause, Reeseville
2 Adolph Troemner, Friendship
3 P. E. Sheppler, Rockland
8 Henry A. Bille, Waupaca
9 Minnie Krause, Reeseville

Field Peas

5 August Wesa, Fish Creek

Red Clover Seed

10 Earl Solquist, Spooner

Timothy Seed

9 Ed. Whitmore, Wausau
14 P. E. Sheppler, Rockland

Hay

Timothy
7 Frank J. Lindley, Fox Lake
8 Frank Menima, Fox Lake
9 Otto Wolf, La Crosse
10 Chas. H. Howitt, Randolph
1 Wolf Bros., La Crosse

Alfalfa
2 Geo. Baier, La Crosse
3 Chas. Howitt, Randolph

Red Clover
5 Frank J. Lindley, Fox Lake
7 Frank P. Grebe, Fox Lake
9 Chas. Howitt, Randolph

PREMIUM AWARDS

Wisconsin State Grain Show, Madison, Wisconsin, January, 1923

Ten Ears Early Yellow Dent (Wis. No. 8) (North Section)
Wm. Hawkinson, River Falls
Henry Baumgartner & Sons, Wrightstown
Alex Baumann, Merrill, R. No. 1
F. Pamperin, Marshfield, R. No. 4
O. C. Woodard, Weyauwega
Mike Baumann, Marathon

Ten Ears Golden Glow (Wis. No. 12) (North Section)
Jacobsen Bros., Green Bay, R. No. 7
Edwin Moore, Green Bay
Paul Falk, Bonduel
Henry Baumgartner & Sons, Wrightstown
Alex Baumann, Marathon
Leo Roffers, De Pere

Ten Ears Wisconsin No. 25 (North Section)
Frances Delwiche, Green Bay
Anthony Delwiche, Green Bay
Hillview Farm, Hayward
Rude Krueger, Cecil
Wm. Schmidt, Rothschild
A. G. Melang, Wausau

Fifty Ears Golden Glow (Wis. No. 12) (North Section)
Jacobsen Bros., Green Bay, R. No. 7
Tom Moore, Green Bay, R. No. 5
Wm. Hawkinson, River Falls
Clyde Huschka, Viroqua
Rude Krueger, Cecil

Fifty Ears Wis. No. 8 or Wis. No. 25 (North Section)
Wm. Hawkinson, River Falls
Anthony Delwiche, Green Bay
Rude Krueger, Cecil
Ernest Polege, Stratford
Wm. Schmidt, Rothschild

Ten Ears Silver King (Wis. No. 7) (South Section)
Otto Wolf, La Crosse
Linus Spangler, Jefferson
Louis Pralle, La Crosse
W. E. Colladay, McFarland
H. A. Ellingson, Stoughton
Gust Guskalkson, Columbus

Ten Ears Golden Glow (Wis. No. 12) (South Section)
R. H. Lang, Jefferson
Geo. Reif, Hixton
Lloyd Hubbard, Jr., Evansville
P. E. Sheppler, Rockland
Arthur O. Popp, Jefferson
Stanley Kivlin, Oregon

Ten Ears Murdock or Clark's Yellow Dent (South Section)
Leo Brueckner, Jefferson
Justus Brueckner, Jefferson
Walter J. Steinhoff, Platteville
Loetta Draheim, Gotham
Gust Guskalkson, Columbus
R. H. Lang, Jefferson

Fifty Ears Silver King (Wis. No. 7) (South Section)
S. P. Markle, La Crosse
John Bendel, Jr., Stoddard
Edward Peters, La Crosse, R. No. 2
Emmett Brunker, Ridgeway
Otto Wolf, La Crosse
W. E. Colladay, McFarland

Fifty Ears Golden Glow (Wis. No. 12) (South Section)
Joseph Brunker, Ridgeway
R. H. Lang, Jefferson
Jippa Wielinga, Midway
P. E. Sheppler, Rockland
John Bendel, Jr., Stoddard
R. J. Boersma, Midway

Fifty Ears Murdock or Clark's Yellow Dent (South Section)
Elmer G. Biddick, Livingston
Leo Brueckner, Jefferson
Justus Brueckner, Jefferson
Gust Guskalkson, Columbus

Ten Ears Yellow or Smut Nose Flint (Either Section)
Loetta Draheim, Gotham
J. W. Jung, Randolph
Leif Rusdal, Viroqua
Ida Guskalkson, Columbus

Ten Ears 8 Row White Flint (Either Section)
Frank J. Lindley, Fox Lake
Louis Pralle, La Crosse

Single Ear Yellow Dent (Either Section)
Walter J. Steinhoff, Platteville
Leo Brueckner, Jefferson
Joseph Brunker, Ridgeway
Jippa Wielinga, Midway
R. J. Boersma, Midway

Single Ear White Dent (Either Section)
Ida Guskalkson, Columbus
R. H. Lang, Jefferson
John Bendel, Jr., Stoddard

Peck Six Row Barley
Henry J. Roffers, De Pere
L. Schmidt, Rothschild
Albert Steffin, Wausau, R. No. 1
Henry Whitmore, Wausau, R. No. 2
Edward Peters, La Crosse, R. No. 2
Edward L. Whitmore, Wausau
Mrs. E. L. Whitmore, Wausau

Peck Wis. Ped. 1 Silvermine Type Oats
Leo Poffers, De Pere
Wm. Schmidt, Rothschild
Arthur O. Popp, Jefferson
H. Alfred Marlow, Beaver Dam
H. Barnhardt, Menomonie

Peck Wis. Ped. 5 Swedish Select Type Oats
Otto Wolf, La Crosse
P. W. Jones, Black River Falls
John Springer, Mosinee
Alex Baumann, Marathon
J. W. Jung, Randolph

Peck Wis. Ped. 7 Kherson Type Oats
Chas. H. Howitt, Randolph
J. L. Krause, Reeseville
J. W. Jung, Randolph
Henry Baumgartner & Sons, Wrightstown
Gust Guskalkson, Columbus

Peck Any Other Variety Oats
Edward L. Whitmore, Wausau
Conrad Gertschen, Marathon, R. No. 3
J. L. Krause, Reeseville
Edward Peters, La Crosse, R. No. 2
Philip Gassner, Marathon

Peck Winter Wheat
Mrs. H. Venske, Wausau
Henry Venske, Wausau
G. R. Rousseau, Cecil
Wm. Herman, Shawano
Harold Kleinsmith, La Crosse

Peck Spring Wheat
Wm. Schmidt, Rothschild
Emil Rick, Wausau, R. No. 2
Felix Krueger, Wausau, R. No. 2
Gust Guskalkson, Columbus
Edward L. Whitmore, Wausau

Peck Winter Rye
Wm. Hunter, Eagle River
Adolph Troemner, Friendship
Elmer Duquaine, New Franken
J. Seyforth, Eagle River
O. J. Kroening, Shawano, R. No. 3

½ Peck Medium Red or Mammoth
J. L. Krause, Reeseville
L. C. DuPont, Fairchild
J. W. Jung, Randolph
H. M. Krause, Reeseville
R. Muskavitch, Shawano, R. No. 1

½ Peck Alsike
J. W. Jung, Randolph
L. Schmidt, Rothschild
J. L. Krause, Reeseville
Henry Venske, Wausau

½ Peck Timothy
Edward L. Whitmore, Wausau
Henry Venske, Wausau
Frank Deck, Ashland
P. E. Sheppler, Rockland

Peck Black Soy Beans
Paul Falk, Bonduel
Jim Bolte, Eagle River
Geo. Kersten, De Pere
Gust Guskalkson, Columbus
Edward L. Whitmore, Wausau

Peck Ito San or Manchu Soy Beans
P. E. Sheppler, Rockland
John Wellens, De Pere
Adolph Troemner, Friendship
C. S. & H. F. Ristow, Black River Falls
P. W. Jones, Black River Falls
Ida Guskalkson, Columbus
Henry A. Bille, Waupaca

Peck Scotch Peas
Max Duquaine, New Franken
Fred Roffers, Ashland
J. B. McDonald, Iron River
Frank J. Lindley, Fox Lake
Arnold Logerquist, Baileys Harbor

Peck Any Other Variety Field Peas
Geo. Roffers, Ashland
P. E. Sheppler, Rockland
J. W. Jung, Randolph

Sheaf Six-Rowed Barley
Henry Baumgartner & Sons, Wrightstown
Jacobsen Bros., R. No. 7, Green Bay
Otto Wolf, La Crosse
J. L. Krause, Reeseville
Frank Gasper, Rockland

Sheaf Early Oats
J. L. Krause, Reeseville
H. M. Krause, Reeseville
R. H. Lang, Jefferson
Henry Baumgartner & Sons, Wrightstown
Gust Guskalkson, Columbus

Sheaf Late Oats
Jacobsen Bros., R. No. 7, Green Bay
Herman Manties, Black River Falls
H. M. Krause, Reeseville
Mrs. L. Becker, Rothschild
Henry Baumgartner & Sons, Wrightstown

Sheaf Winter Wheat
Oliver Meyer, Hales Corners, R. No. 1
J. L. Krause, Reeseville
Wm. H. Basse, Milwaukee, R. No. 3, Sta. D.

Sheaf Spring Wheat

Henry Baumgartner & Sons; Wrightstown
J. L. Krause, Reeseville
Otto Wolf, La Crosse

Sheaf Rye

Otto Wolf, La Crosse
J. L. Krause, Reeseville
Edward Peters, La Crosse, R. No. 2
Frank J. Lindley, Fox Lake

10 Heads Amber Sorghum or Feteria

Ida Guskalkson, Columbus
Lawrence H. Kehoe, Milton, R. No. 10
W. P. Brenner, Green Bay

Bundle Alfalfa

Adolph H. Thompson, Black River Falls
Alvin Basse, Milwaukee, R. No. 3, Sta. D
Jacobsen Bros., Green Bay, R. No. 7
Hallis Reinheimer, Cecil
Byron Reinheimer, Cecil
Chas. H. Howitt, Randolph

Bundle Medium Red or Mammoth Clover

H. T. Draheim, Gotham
Edward Peters, La Crosse, R. No. 2
H. R. Berndt, West De Pere, R. No. 1
Oliver Meyer, Hales Corners, R. No. 1

Bundle Alsike Clover

H. R. Berndt, West De Pere, R. No. 1
E. J. Reinheimer, Cecil
Otto Wolf, La Crosse
Mrs. E. L. Whitmore, Wausau

Bundle Timothy

Otto Wolf, La Crosse
Henry Baumgartner & Sons, Wrightstown
Vollmer Bros., Hales Corners
Edwin Moore, Green Bay

Bundle Sudan Grass

Jippa Wielinga, Midway
J. L. Krause, Reeseville
Minnie Krause, Reeseville

Bundle Any Other Hay

Oliver Meyer, Hales Corners, R. No. 1
E. J. Reinheimer, Cecil
Hallis Reinheimer, Cecil

Bundle Soy Bean Hay

P. Muskavitch, Shawano
Reinhold Kressin, Jackson, R. No. 2
Frank J. Lindley, Fox Lake
Jacobsen Bros., Green Bay, R. No. 7
Frank Gasper, Rockland
Otto Wolf, La Crosse

Bundle Mature Soy Beans

Jippa Wielinga, Midway
Jacobsen Bros., Green Bay, R. No. 7
Minnie Krause, Reeseville
Wm. H. Basse, Milwaukee, R. No. 3, Sta. D.
Gust Guskalkson, Columbus

Bundle Field Pea Hay

Henry Baumgartner & Sons, Wrightstown
Wm. Furnow, Shawano
Otto Wolf, La Crosse
Edward Peters, La Crosse, R. No. 2

Bundle Mature Field Peas

P. E. Sheppler, Rockland
Wm. Schmidt, Rothschild
Otto Wolf, La Crosse
Mrs. Aug. Wiesman, Fenwood

Bundle Hemp

J. L. Krause, Reeseville
Otto Wolf, La Crosse
H. M. Krause, Reeseville

Sheaf Flax

Gust Kuskalkson, Columbus
J. L. Krause, Reeseville
Ida Guskalkson, Columbus

HONORARY CLASS

Ten Ears Clark's Yellow Dent

H. T. Draheim, Gotham
Elmer G. Biddick, Livingston

Ten Ears Silver King

Joseph Brunker, Ridgeway
Emmett Brunker, Ridgeway
John Bendel, Jr., Stoddard

Ten Ears Golden Glow

Joe Brunker, Ridgeway
John Bendel, Stoddard
Chas. H. Howitt, Randolph

Ten Ears Early Yellow Dent

R. H. Lang, Jefferson
Frank Gasper, Rockland

Ten Ears Any Variety 8-Row Flint

H. T. Draheim, Gotham
Chas. H. Howitt, Randolph
Coley Strong, West Allis

Peck Wis. Ped. Barley

Richard Kleinsmith, Onalaska
Jacobsen Bros., Green Bay, R. No. 7
Wm. H. Basse, Milwaukee, R. No. 3, Sta. D

Peck Wis. Ped. No. 1 Oats
Richard Kleinsmith, Onalaska
Otto Wolf, La Crosse
Henry Baumgartner & Sons, Wrightstown

Peck Wis. Ped. No. 5 or Swedish Select Oats
Richard Kleinsmith, Onalaska
H. T. Draheim, Gotham
Jacobsen Bros., Green Bay, R. No. 7

Peck Winter Wheat
Wm. H. Basse, Milwaukee, R. No. 3, Sta. D
Arthur O. Popp, Jefferson
J. L. Krause, Reeseville

Peck Wis. Ped. Rye
Frank Prochnow, Luxembourg
Wm. Herman, Shawano

Bundle Alfalfa
Wm. H. Basse, Milwaukee, R. No. 3, Sta. D
Otto Wolf, La Crosse
Frank Gasper, Rockland

SWEEPSTAKES AND TROPHY AWARDS

Ten Ears Silver King Corn
Joseph Brunker, Ridgeway

Ped. No. 1 Oats
Richard Kleinsmith, Onalaska

Ped. No. 5 Oats
Richard Kleinsmith, Onalaska

Six-Row Barley
Richard Kleinsmith, Onalaska

Ped. Winter Rye
Frank F. Prochnow, Luxembourg

Ten Ears Yellow Dent
Leo Brueckner, Jefferson

Spring Wheat
Wm. Schmidt, Rothschild

Fifty Ears Dent Corn
Joseph Brunker, Ridgeway

Bundle Ped. Barley
Henry Baumgartner & Sons, Wrightstown

Ten Ears Any Variety Corn
Leo Brueckner, Jefferson

CONSTITUTION AND BY-LAWS

CONSTITUTION

Article I—Name

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II—Object

The object of this association shall be to promote the agricultural interest of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming.

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigation to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III—Membership

Section I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Any county order member who has been actively engaged in county order work for two or more years, and who is recommended by the secretary of his county order and the secretary of the state association, is eligible to membership in the association.

Section II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Article IV—Dues

A fee of one dollar shall be collected from each member annually.

Article V—Officers

The officers of this association shall consist of a president, vice-president, secretary, and treasurer, whose terms of office shall be one year or until their successors are elected.

Article VI—Duties of Officers

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to

appoint all regular committees as he may deem expedient for the welfare of the association.

Section II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Section III. It shall be the duty of the secretary to keep all records of the association; to report the results of all cooperative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Section IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary, signed by the president. He shall furnish bonds in the sum of two thousand dollars, with two sureties, for the faithful performance of his duties.

Article VII—Amendments

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1—Adopted Feb. 9, 1906

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University, may become a member of this association under the same regulations as students from the Wisconsin College of Agriculture.

Amendment No. 2—Adopted Feb. 11, 1909

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of $1.00.

BY-LAWS

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be ex-officio members of the executive committee.

Art. III. This association shall be governed by Robert's Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

CONSTITUTION AND BY-LAWS OF THE COUNTY ORDER OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

Article I.—Name. The organization shall be known as the..... .....County Pure Bred Seed Growers Association—an Order of the Wisconsin Experiment Association.

Article II.—Object. The object of this organization shall be to promote the agricultural interests of the County and State in general.

1st. By Cooperating with the Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having Associations' exhibits at agricultural fairs.

3rd. By having annual meetings in order to report and discuss topics beneficial to the members of the Order.

Article III.—Membership. 1. Any person may become a member of this Order who has taken a course in the College of Agriculture at Madison or at any place in the State under the jurisdiction of the College.

2. Any one who is interested in pure bred grains and live stock or in progressive farming in general may become a member of this Order.

3. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

Article IV.—Dues. A fee of fifty cents shall be collected from each member annually.

Article V. Officers. The officers of this Order shall consist of a President, Vice President and Secretary-Treasurer, whose terms of office shall be one year, or until their successors are elected.

Article VI. Duties of Officers. 1. It shall be the duty of the President to preside at all meetings of the Order and to enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the Order.

2. In the absence of the President, the Vice-President shall preside and perform the duties of the President.

3. The Secretary-Treasurer shall keep the records of all meetings and proceedings of the Order, also the names of all members and their addresses. He shall also keep the funds of the Order, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

Article VII.—Disbursements. The funds of the Order shall be used to defray expenses or by vote of the Order for such purposes as will advance the agricultural interests of the Order and shall be paid out

only upon an order signed by the President and countersigned by the Secretary.

Article VIII.—Amendments. This constitution may be amended at any meeting, by a two-thirds vote of the members of the Order present.

BY-LAWS

Article I.—The officers of this Order shall be elected by ballot at the annual meeting.

Article II. This Order shall be governed by Robert's Rules of Order.

Article III.—All members joining at the organization of this Order shall be known as Charter Members.

Article IV.—The time and place of holding the annual meeting shall be determined by the officers.

Adopted....., 19.....