

GROWING ALFALFA SEED IN MICHIGAN

By P. R. MILLER AND R. E. DECKER



MICHIGAN STATE COLLEGE
Of Agriculture and Applied Science

EXTENSION DIVISION
R. J. Baldwin, Director

GROWING A BETTER SEED
IN THE FUTURE

GROWING ALFALFA SEED IN MICHIGAN

By P. R. MILLER AND R. E. DECKER
Extension Specialists in Farm Crops

SEED PRODUCTION IN MICHIGAN

Farmers of Michigan recognize alfalfa as our most dependable forage crop. The steady increase in acreage during the last 10 years shows the confidence being placed in the crop. While most growers have been relying upon it for hay, there have been some who have had a surplus of hay and have tried seed production. One grower in Tuscola county has been working with alfalfa seed production for nearly 20 years.

The following figures will give an idea of the amount of seed produced in Michigan during the last four years.

YEAR	CERTIFIED SEED BUSHELS	STATE CROP BUSHELS
1927	572	*3,500
1928	750	*4,000
1929	450	*2,400
1930	2,500	*12,500

Seed production is, therefore, a possibility, and it assumed the proportions of a major farm enterprise in some localities in 1930. A thresherman in eastern Saginaw county reports that his outfit hulled between 1,500 and 1,600 bushels of alfalfa seed in 1930. Similar reports were received that season from sections of the Thumb. Yields of seven and eight bushels per acre, from the first cutting, were common in that section of the State.

SEED PRODUCTION HAS HAZARDS

Alfalfa seed production is not without hazards. The yields of 1930 were in sharp contrast to those of 1929 when a great many growers got disappointingly low yields. There were reports in some instances where growers saved a crop for seed and got scarcely enough to pay harvesting expenses.

The primary purpose of growing alfalfa on most Michigan farms is for hay. An expanding livestock industry which lends stability to Michigan agriculture is strengthened by a dependable forage crop like alfalfa.

*Unofficial estimate.

Alfalfa hay production in Michigan is dependable and profitable. When the individual farmer has increased his alfalfa acreage to the point where he has a surplus of hay, he can begin to think about seed production. The high yields of 1930 are going to stimulate interest in the growing of alfalfa seed. The object of this bulletin is to point out some of the problems which growers have experienced in the past. Those who are thinking about alfalfa seed production can profit by the experience of others.

SOILS ADAPTED TO SEED PRODUCTION

Good yields of alfalfa seed have been produced in Michigan on the silt loams and clay loams of Monroe county and of the Thumb section.



Fig. 1.—Grower and county agricultural agent determining extent to which crop is setting seed.

The sandy loams of the northern part of the Lower Peninsula as well as similar soils found quite generally in other parts of the state have produced highly satisfactory yields. Seed production has not been attempted to any extent in the Upper Peninsula although some seed was produced in the season of 1930. A high lime content is a common characteristic of practically all the soils which produce alfalfa seed. Those soils which are naturally high in mineral plant foods seem to give the most satisfactory yields.

Just what part the use of commercial fertilizers play in alfalfa seed production has not yet been worked out under Michigan conditions. Phosphoric acid and potash in liberal quantities are necessary to produce a good stand of healthy, vigorous, alfalfa plants which are needed for the production of high seed yields. Excessive nitrogen in the soil seems to hinder the setting of seed.

According to recommendations of the soils department of Michigan

State College, the use of 300 or 400 pounds per acre of 0-14-14 or a fertilizer of similar analysis is advisable on sandy soils when alfalfa is sown. This often makes the difference between a good and a poor stand of plants. Likewise the soils department suggests 300 to 400 pounds per acre of 20 per cent super-phosphate at seeding time on the heavier soils to help provide a better stand and more thrifty plants.

USE GOOD PRACTICES IN SEEDING THE CROP

Alfalfa growers should use the best practices in starting a crop of alfalfa for hay purposes and then if an attempt at seed production seems advisable, a good foundation has been laid. Use of lime, when needed, commercial fertilizers, a well-fitted seed bed free from weeds, and sow-



Fig. 2.—Grower roguing field. Bad weeds are carried off field and later burned.

ing good seed of recommended hardy varieties should lay a proper foundation for either hay or seed production. Where alfalfa is being seeded primarily for seed production, a rate of seeding of six pounds of seed per acre is recommended.

CLEAN SEED FROM CLEAN FIELDS

The Michigan alfalfa seed industry cannot prosper unless weeds are controlled. Growers attempting seed production must have clean fields if seed of high quality and purity is to be produced. Pure seed sown on clean soil is essential to the production of seed which will bring top market prices with a minimum of shrinkage when it is cleaned. Roguing out any dangerous weeds which appear in the field

is also necessary. It is not uncommon for the seeds of many of our most troublesome weeds to remain in the soil several years before sprouting. The same is true of the seed of sweet, red, and alsike clover all of which are troublesome in the alfalfa seed crop. It is usually advisable to cut the field for hay the first season after planting as this practice will tend to rid the field of many weed and other crop plants present. Vigorous cultivation with a spring-tooth harrow or quack grass cultivator after the second season materially assists in keeping the stand clean.

Previous to harvesting the seed crop, all weed and crop plants that may contaminate the seed should be pulled or cut and removed from the field. This is especially necessary in the case of sweet clover, red clover, and other plants which produce seeds impossible or difficult to separate from the alfalfa seed with cleaning and grading machinery.

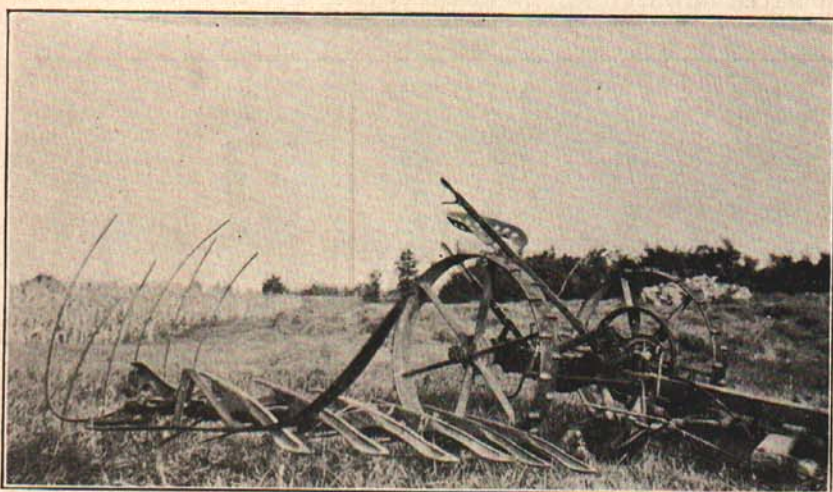


Fig. 3.—Type of buncher commonly used by Michigan farmers in harvesting alfalfa seed.

A partial list of weed and other crop plants which should be rogued from alfalfa seed fields before harvest is given. Their complete removal will help to insure seed of the highest quality and will prevent a heavy shrinkage in the cleaning process.

- | | |
|------------------|----------------------------|
| X Quack Grass | * Alsike Clover |
| X Canada Thistle | * Lamb's Quarter |
| X Wild Carrot | * Night-flowering Catchfly |
| | * Buckhorn |
| ‡ Yellow Trefoil | * Green Foxtail |
| ‡ Sweet Clover | * Field Peppergrass |
| ‡ Red Clover | * Lady's Thumb Smartweed |
| | * Dock |

X Noxious according to State Seed Law. Only one seed in 2,000 alfalfa seeds permitted. Difficult to remove.

‡ Impossible to remove with cleaning machinery.

* Difficult to remove with cleaning machinery, necessitating heavy shrink.

Those unacquainted with any of the above plants or their seeds may secure information about them from their county agricultural agent or the botany or farm crops departments, Michigan State College, East Lansing, Michigan.

PREDICTING A SEED CROP

The alfalfa plant is very exacting in its requirements for the setting of seed, and growers everywhere secure seed crops only when those requirements are met. Such a condition accounts for the wide fluctuation of the crop in Michigan from year to year and determines its success or failure. Michigan farmers who attempt seed production will do well to watch closely the weather and the bloom since the evidence



Inspection of fields gives opportunity to acquaint growers with better seed production practices.

furnished by them seems to be the most satisfactory means of determining whether to save the crop for seed or cut it for hay. Bright clear weather apparently favors the setting of seed and, if such weather prevails during the bloom period, the crop should be allowed to come to full bloom. If, at full bloom, more than two-thirds of the blossoms are forming seed pods, "burrs" or "ram's horns," prospects for a seed crop are favorable. If the majority of the blossoms are falling off and leaving no seed pods, the crop should be cut for hay. This falling off of blossoms is called stripping by seed growers.

Stripping seems to be more prevalent during periods of cloudy weather and excessive rainfall. Strong hot winds during the bloom period likewise seems to have a detrimental effect on the setting of seed.

Growers in the southern and central part of the State may try the same procedure on the second crop when the first has been cut for

hay. In the northern counties, however, seed will have to be secured from the first cutting as seed from the second cutting is too likely to be injured by frost before it has matured.

The taking of a seed crop from alfalfa in no way injures the permanence of the stand.

WHEN AND HOW TO HARVEST

Alfalfa seed should be harvested as soon as the greater portion of the seed in the pods has taken on a bright yellow color, and when one-half to two-thirds of the pods are ripened to a dark brown.

Cutting on cloudy days or while the dew is on minimizes shattering. The majority of Michigan farmers use a mower with a buncher or windrow attachment on the mower bar such as is used in harvesting canning peas. Several are finding the self-rake reaper very satisfactory. Loss from shattering can be further reduced by cocking or bunching immediately after cutting. Bunches should be small to allow rapid drying and to permit loading them on the wagon in one forkful. Tearing apart a bunch of ripened alfalfa is certain to result in shattering the seed.

Some growers thresh from the field when the crop is thoroughly cured. Others prefer to stack and thresh later. In either case, it is advisable to handle the crop as carefully and as little as possible. Racks used to haul the crop to the huller or stack should have tight bottoms or be covered with canvas. It is also advisable to spread canvas or bags under and around the huller during threshing and around the stack while it is being built.

HULLING

One Michigan grower, several years ago, lost nearly two hundred dollars on the selling price of his seed by neglecting to clean the sweet clover from the huller before running his crop through. A huller that has just finished a job of sweet, red, or alsike clover, or foul alfalfa seed should never be used without first thoroughly cleaning all ledges, elevators, sieves, and boots. It is good economy to insist on a clean machine.

The clover huller does a very satisfactory job because the operation is complete and very few of the seeds are lost. Ordinary grain threshers, equipped with sieves and recleaning attachments, and operated by experienced threshermen, have been used with quite satisfactory results in some communities where hullers are not available.

Growers taking seed to an ordinary elevator for cleaning should insist that all equipment used in the cleaning process be thoroughly cleaned to avoid mixture and contamination.

VARIETIES FOR SEED PRODUCTION

Farmers growing alfalfa for hay production have found that the Hardigan and Grimm varieties are the most dependable. They also are recognized in other States as being superior to common strains.

Therefore, from the standpoint of market demand, Michigan seed growers will find it advantageous to produce Hardigan or Grimm.

Hardigan is moderately superior to Grimm in hay production but markedly so in seed production. It was developed at the Michigan State College by the late F. A. Spragg who, in making his selections, had in mind a strain which would produce seed abundantly under Michigan conditions. Not only has Hardigan surpassed Grimm as a seed producer in Michigan but it has given better yields where tested in the West.

Professor E. E. Down, Michigan State College plant breeder, who has carried on work with Hardigan for nearly 15 years, states that Hardigan alfalfa produces blossoms much more profusely than other varieties and nearly doubles Michigan farmer's seed growing opportunities.

START WITH CERTIFIED SEED—HAVE YOUR CROP CERTIFIED

There are two market classes of alfalfa seed which growers should bear in mind when purchasing seed. They are, the certified and the uncertified classes. Certified seed is of known variety and origin. Its pedigree can be traced back to the original foundation seed stock. For example, Certified Hardigan has a definite pedigree which traces back to the original seed released from the Michigan State College in 1920. Certified Grimm alfalfa has a definite pedigree tracing back to the original Grimm plantings in Carver County, Minnesota.

In Michigan, this certification work is carried on by the Michigan Crop Improvement Association, a growers' organization, working under the supervision of the farm crops department of Michigan State College. The Association inspects Hardigan and Grimm alfalfa fields if the grower can furnish satisfactory evidence that the seed which he used had a definite, established pedigree. Fields which show typical variegated blossoms but which lack a definite pedigree may be inspected and certified by the Association as Michigan Variegated.

A representative of the Michigan Crop Improvement Association inspects the crop while it is growing in the field, a sample of the uncleaned, hulled seed is sent to the association for inspection, and after the seed has been cleaned and ready for market, a sample is again submitted for final inspection. This sample must come up to the Association's standard of purity and germination and must conform to the Seed Law of Michigan.

Certified seed is, therefore, of known variety, known origin, and high quality. It comes in sealed bags bearing the certification tag of the

Crop Improvement Association which has carried on the inspection work.

Michigan farmers who are planning on putting in new alfalfa seedings with the idea of growing a seed crop at some future time would do well to write to the Secretary of the Michigan Crop Improvement Association at East Lansing for full particulars on producing certified seed.

