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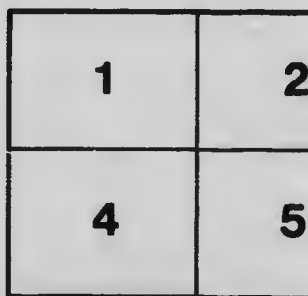
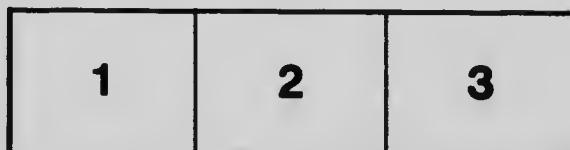
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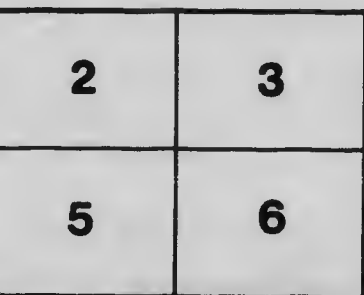
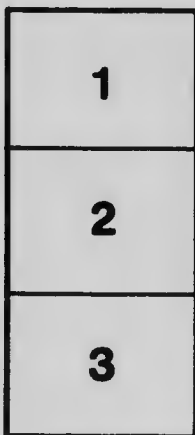
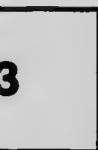
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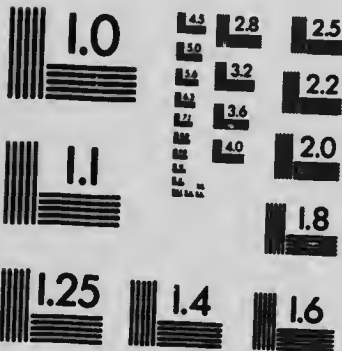
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MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



ALFALFA SEED PRODUCTION

By JOHN BRACKEN, Professor of Field Husbandry
College of Agriculture, University of Saskatchewan

Alfalfa seed is retailing this year at from 20c to over \$1.00 per pound. The price of the hardiest varieties varies from 40c to \$1.00 and these are the only ones that should enter into general use in Saskatchewan.

It is apparent that when sown at the usual rate, and in the ordinary manner, that the cost of seed is in itself sufficient to prevent many men from growing the crop. Eight or ten pounds per acre at 60c per pound is too much money to put into even alfalfa, particularly in the dry parts of the province where the yield of forage is often very light. When the price of seed is reduced to 20c per pound one great objection to the growing of the crop will be removed. Even at this figure alfalfa seed production should prove a profitable undertaking.

Under these circumstances it would appear that the next step in the propaganda for more alfalfa should be the encouragement of seed production. If cheaper seed of our hardiest varieties were available there is no doubt that more alfalfa would be sown. Until seed is available at a reasonable price the cost of putting down land to alfalfa will continue to be a serious obstacle in the way of alfalfa production.

POSSIBILITIES OF SEED PRODUCTION

In the year 1912 a yield of 300 pounds of Grimm's Alfalfa per acre was reported from a farm in southern Alberta; in 1913 on the same farm the yield was 150 pounds, and in 1914 about 40 pounds per acre. In 1912 a yield of 90 pounds was reported from Avonlea and in 1914 an equal amount was produced at Maymont, Sask. At Neepawa, in Manitoba, in 1914 an 8-acre field produced at the rate of 300 pounds per acre of Grimm's Alfalfa.

On the University Farm at Saskatoon no alfalfa was grown in rows for seed until the year 1914. Under field conditions, in the year 1911, abundance of seed formed, but none ripened; in 1912 Grimm's Alfalfa yielded at the rate of 100 pounds per acre; in 1913 at the rate of 50 pounds per acre, and in the dry year of 1914 the yield ranged from 20 pounds to 116 pounds per acre according to the cultural treatment given.

The nature of the alfalfa plant is such that, if at the time the plants are coming into bloom, or even if already in bloom, rains occur, new shoots very soon occur at the base of the plants and seed formation stops. For this reason very little alfalfa seed can be grown in humid countries, and for the same reason it would seem that the drier parts of our own province should be well suited to seed production.

It has already been observed that the crop does not ripen seeds in the north as well as in the south and west where the dry winds and higher temperatures are more prevalent. From these observations it would seem that the warmer soil types in southern and west central Saskatchewan, the production of alfalfa seed should prove a very paying proposition.

SUITABLE VARIETIES FOR SEED

No figures on the relative value of different varieties for seed purposes are available. It has, however, been observed on the plots at the University that Grimm and other variegated sorts seem to get seed much more freely than any of the common varieties. Similar observations have been made at different places in the northern prairie States. All information that has been gathered seems to point to the one

conclusion, that it is much more preferable when growing alfalfa for seed, to use the Grimm sort rather than any other variety.

SEEDING IN ROWS LOWERS THE COST OF SEEDING AND INCREASES THE YIELD

The figures on the chart reproduced here illustrates what has commonly been observed and often reported, viz., that for seed production alfalfa sown thinly in wide rows is likely to prove very much more satisfactory than when sown in any other way. As little as 1 pound per acre is now being sown on several farms in southern Alberta. It is our opinion that seeding in rows 30 or 36 inches apart, at the rate of 2 pounds per acre, is likely to prove the most satisfactory method in alfalfa seed production on our lighter, drier lands.

PREPARATION OF LAND

When alfalfa is to be sown in rows for seed it is not necessary that the land be fallowed or even that intertilled crops precede the alfalfa, although both of these preparations will, of course, give the crop the best possible start. Stubble land that has been worked in such a way as to rid it entirely of creeping rooted grasses is quite satisfactory to sow alfalfa when the crop is put in in wide rows. The land should be plowed deeply either in the fall or spring and thoroughly worked down. The use of the land packer is advisable and the surface soil should be made quite mellow by surface cultivation with the disc, cultivator or harrow.

SEEDING

The seed may be sown with the ordinary grain drill by closing either four or five of the spouts and allowing the 5th or 6th run. In order to sow as thinly as suggested it is necessary to increase the bulk of the seed by adding to it cracked barley or cracked wheat or some other material.

The seed should be sown very shallow, preferably not more than an inch in depth. The soil should be firm so that moisture to germinate the seed will be available at the depth to which the seed is planted. When only a small quantity is to be sown the garden drill may be used.

The best time for seeding alfalfa is in the rainy season or between the 20th of May and the 20th of June. It may be sown rather later when the soil is in a particularly favorable condition or in years when the rains are delayed beyond the usual time.

INOCULATION IMPORTANT

For the same reason that inoculation is advisable when sowing alfalfa for forage purposes, it is also important that it be used when growing the crop for seed. Soil from an old successful alfalfa field may be mixed with the seed before sowing, or artificial bacteria culture may be purchased in packages containing sufficient to treat from 20 to 60 pounds of seed for from 25c to \$2.00 per package. The Bacteriological Department of the Ontario Agricultural College at Guelph, and the Manitoba Agricultural College at Winnipeg, are prepared to supply this material at 25c per package. The Earp-Thomas Farmogerm Company of Bloomfield, New Jersey, supplies the culture for \$2.00 per package of the same size. The last mentioned, although expensive, has given very excellent results at Saskatoon. Where the soil can be obtained free from weeds and plant diseases, it would seem that it is the surest means of getting the crop satisfactorily inoculated.

CULTIVATION

When alfalfa is sown in rows for seed, weeds are likely to make considerable growth the first year, unless the land is particularly clean. To control the weeds it is necessary to intertil the crop; it is seldom necessary to hoe the rows, but even this is sometimes advisable. If the land is thoroughly prepared and gotten as clean as possible the alfalfa, if sown at the right time, will make a very early start. Thereafter, intertillage should be given often enough to control the weeds and keep a mulch on the land to lessen the loss of moisture by evaporation.

If weeds grow up in the rows it is advisable to clip back the alfalfa. If all conditions are favorable and the crop makes a good growth the first season, sometimes a crop of forage may be taken. It should be kept in mind, however, that a growth of from 8 to 12 inches should be left on the field in the fall in order to gather snow and thus protect the plants against the low temperatures of the first winter. If it is thought that after the removal of the crop there is not likely to be much growth it is better to leave it uncut.

Each spring after the year the crop is sown it is necessary to double disc or "renovate" the field. This operation should be done as soon as the soil is in condition to work in the spring and before the plants make much growth. Intertillage as needed to conserve moisture and to control weed growth should be given throughout the summer.

HARVESTING

The harvesting may be done with the ordinary binder. As soon as two-thirds or more of the seed pods have turned brown or black, the crop is fit to cut. In the warmer parts of the province this will occur generally in the latter part of August, but in the more humid parts of the province some of the seed is often more or less immature until the first fall frosts come. Seeds that are mature suffer no injury from frost, so that by leaving an undeveloped crop until the first frosts occur, no damage is likely to result and more of the immature seeds may ripen.

If the crop is well matured and dry, it may be tied in tight bundles, otherwise it should be tied in loose ones. The crop may be stocked after much the same fashion as wheat and it is generally desirable to stack it after the sheaves have dried out thoroughly. Stacking, however, is not essential if the seed is mature and the sheaves dry out well in the stook.

THRESHING

The threshing is done best by the use of a clover-alfalfa huller. At the present time these machines are not available. The ordinary grain separator may, however, be adjusted so that it will do quite satisfactory work. By the use of this machine the pods are separated from the straw and leave the machine by way of the grain spout; the threshed seeds pass out through the opening that in grain threshing ordinarily carries off the weed seeds. The pods should be put through the machine a second time in order to separate all seed from them. If the straw is damp or tough, it is sometimes necessary to put it through the machine again, but when it is entirely dry and well matured, this is seldom necessary. The use of the grain separator in threshing alfalfa is not economical of seed, but in the absence of a huller may be used.

In threshing alfalfa with the grain separator the front of the cylinder should all be closed with the exception of a small space at one side, and all of the back should similarly be closed with the exception of a small space at the opposite side. This compels the alfalfa to pass round the cylinder several times before it escapes into the body of the machine. All of the concaves should be used and all closed up well. It is advisable to use a wide chaffer and a sieve that will let the unthreshed pods through. The wind should be adjusted so that unthreshed pods will not be carried past the tallings auger. The delivery spout will carry a large proportion of unthreshed pods, and as pointed out before, these should be returned to the cylinder until all of the pods are broken. With a high bagger this, of course, is easily accomplished. The screen in the bottom of the mill should be large enough to permit the threshed seed being collected at the screenings spout.

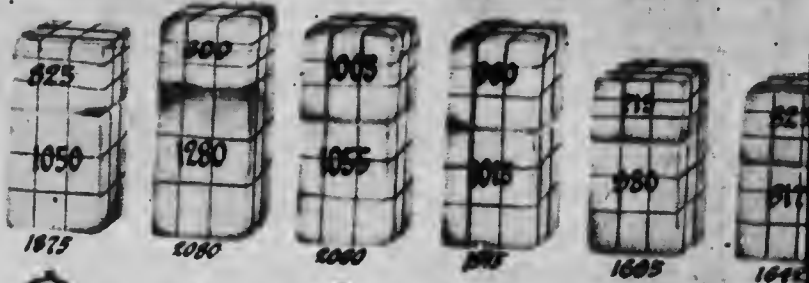
The seed when threshed in this way will be found to contain quite a proportion of chaff and broken stems, but these impurities are easily removable by the fanning mill. Threshing with the grain separator is rather a slow process, but until a large acreage is assured its use in preference to the purchase of an alfalfa huller seems advisable.

ALFALFA FOR FORAGE AND SEED

Lbs. per acre 1914

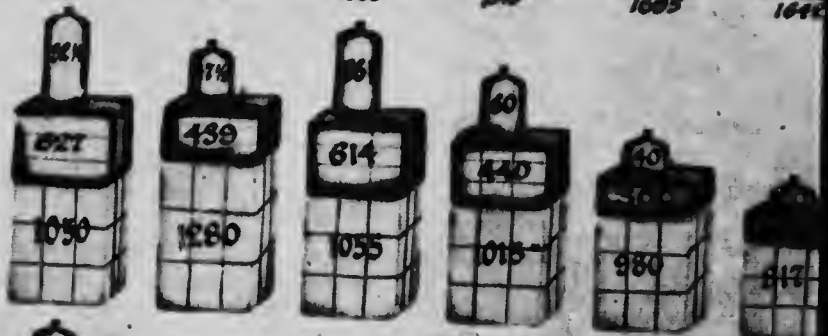
Hay only

2nd Cutting
1st Cutting



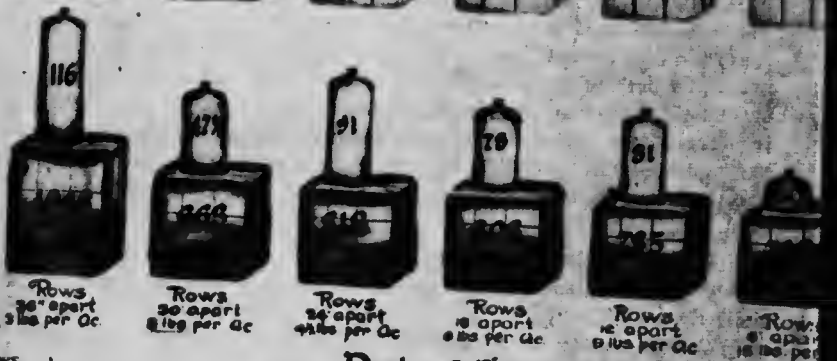
803

2nd Seed Cutting
2nd Straw Cutting
1st Hay Cutting



ed ly

Seed
Straw



etc.

short to cut with binder - yield estimated.

Yield estimated.

double disc & double harrowed

1914

rows harrowed once & cultivated 4 times.

Original - Innovation Barrows Culture.

and Year - Soil - Heavy Loom

Dept. of Field Husbandry
University of Saskatchewan

Yield of Alfalfa Seed and Alfalfa Hay on University Farm at Saskatoon in the dryest growing season the district has known.





