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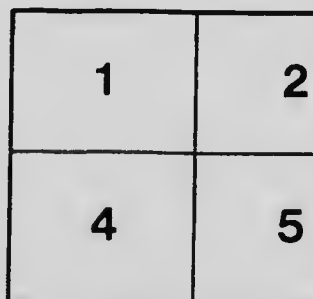
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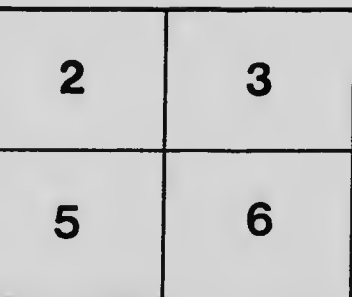
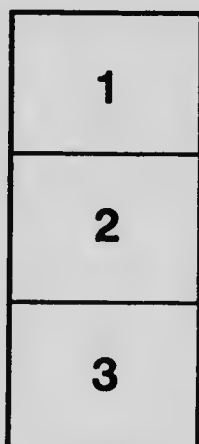
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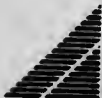
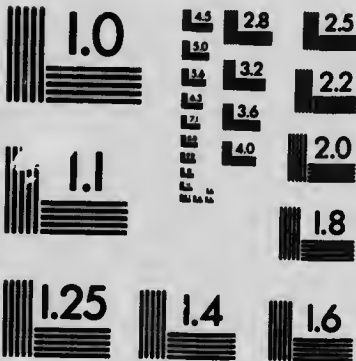
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# Manitoba Agricultural College

WINNIPEG, CANADA



Grimm Alfalfa Seed Grown in Manitoba

## Alfalfa Growing in Manitoba

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# Alfalfa Growing in Manitoba

Alfalfa has been regarded quite generally as a crop suitable for districts where the climatic conditions are known to be comparatively mild. While it is especially well adapted to the warmer portions of the South Western States, and is also counted as the banner forage crop of the irrigated districts in the West, special types or strains have been developed for the northern areas, and field tests have proven conclusively that alfalfa has a much wider range of territory than was formerly supposed.

The demonstration plots in this Province have afforded still further evidence in this direction, and the man who wishes to devote a portion of his farm to the production of an excellent forage or hay crop, will do well to give alfalfa a place in his list. Practical farmers in several localities have cultivated alfalfa with some measure of success, and this merely substantiates the field demonstrations which have been started and are being extended by the Provincial Department of Agriculture.

## SPECIAL VALUE OF ALFALFA

Alfalfa not only serves to balance the ration for the farm live stock, but it also provides a means whereby nitrogen can be secured cheaply from the soil air. Alfalfa has a deep rooting system, and it may thus take the place of a sub-soiler in opening up the lower soil layers. It may be observed as well that such a crop leaves considerable organic residue in the soil. The latter material is important in that it increases the moisture holding capacity of the soil, and in the process of decomposition assists in liberating plant food for the growing crop. With the introduction of alf-



Alfalfa Field in Western Manitoba

oculate fifty to sixty pounds of seed. Complete directions regarding both of these methods can be obtained by sending a request to the Manitoba Agricultural College, Winnipeg.

### VARIETIES OF ALFALFA

Within the past decade considerable interest has been taken in the development of varieties of alfalfa adapted to northern climatic conditions. Of these, seed of only three varieties, Grimm, Baltic and Turkestan, has been produced in commercial quantities. Grimm and Baltic are generally conceded to be the hardiest of the three and are the only ones that should be grown if seed can be secured. The supply of seed, however, is limited, consequently the price per pound is very much higher than Turkestan. The latter is a commercial term used for alfalfa seed produced in Turkestan, consequently the plants may prove either hardy or tender. In most cases it has given satisfactory results in Southern Manitoba.

Noxious weed seeds are sometimes brought in along with alfalfa seed, hence in buying, the purchaser should take only Number 1 Seed sold under the regulations of the Seed Control Act.

### RATE OF SEEDING

The quantity of seed sown per acre will depend on its viability and the annual precipitation. For most districts in Manitoba seed of high vitality should be sown about twelve pounds per acre. In the drier districts eight to ten pounds will be sufficient.

### TIME OF SEEDING

In general, it may be stated that alfalfa seed can be sown safely between the dates May 15th and June 15th. If sown earlier than the middle of May the young plants may be damaged by freezing. Summer showers frequently come early in June, and to get the benefit of these the seeding should be done the latter part of May, or early in June.

### METHOD OF SEEDING

The best results are obtained when the seed is sown with the grain drill, the latter being set to sow about one inch deep. This permits covering with soil at a uniform depth, and the seed is brought directly in contact with soil moisture. Following the seed it should be mixed with twice the quantity of coarse, cracked wheat or barley, from which the fine flour has been blown with the fanning mill. If the seeder is set to sow about two pecks of wheat it will put on approximately twelve pounds of alfalfa seed.

### USING A NURSE CROP

It is customary, in sowing clover seed, to put the seed in along with oats or barley, and this practice has led some farmers to believe that alfalfa can be sown in the same way. The nurse crop not only shades the young alfalfa plants and prevents them from making their most rapid growth, but it also consumes moisture and plant food, thereby reducing the supply available for the young and tender plants. For this reason it has proven to be much more satisfactory to sow the alfalfa without a nurse crop. In districts where the soil has a tendency to drift, a bushel of oats per acre may be sown in order to overcome this difficulty; but the oats should be clipped with the mower when the alfalfa has obtained a foothold.





Threshing Alfalfa Seed in Central Manitoba

### PREVIOUS CROPPING

In selecting a field for alfalfa some attention should be given to the crop which has been grown the preceding season. To get the best results, well defined plans should be made one or two years prior to seeding. Summerfallow which has been well cultivated and is reasonably free from noxious weeds gives the grower an excellent starting point. This or any hoed crop suggests at least three advantages. In the first place, the cultivation given will eradicate many of the weeds which have come into the field; secondly, moisture will be stored for the young alfalfa, and, thirdly, the field will be left in an excellent physical condition.

### THE SEED BED

A firm well prepared seed bed will assist materially in getting a catch the first season. Where the seed is to be sown on summerfallow, corn or root land, the drag harrow (and if very compact the disc) can be used to work up a mulch one and one-half to two inches deep in the spring. The work should start as early as possible and continue at frequent intervals until the alfalfa is sown. This will kill the weeds, conserve the moisture, and prepare an ideal seed bed.

### INOCULATION WITH ALFALFA BACTERIA

Alfalfa belongs to a class of plants which possesses the ability to acquire nitrogen from the soil air. This is accomplished through the microscopic organisms which may be found in small nodules on the root system of this, and other, leguminous crops. Nitrogen is an essential element of plant growth, and, as it is possible to increase the supply of this element in the soil in the manner indicated, any step which may assist in bringing about this co-operation in plant growth should be taken when the alfalfa is ready for sowing. One of two methods may be employed in introducing alfalfa bacteria into a new district. Soil may be taken from an old alfalfa field known to possess the proper organism, and a transfer can be made to the newly seeded area. It is customary to use approximately one hundred pounds of soil per acre. Laboratory cultures containing alfalfa bacteria are also available for this purpose. A small bottle of this culture will in-

alfa—and this will apply equally well to the clovers—better systems of crop rotations can be organized, and the farm income can be made somewhat more regular. Moreover, the production of forage crops is directly related to a better seasonal distribution of farm labor.

### PLACE IN ROTATION

The rotation that includes alfalfa must of necessity be a long one, since alfalfa does not produce its maximum yields until the third or fourth year. Most farmers do not need a large acreage of this fodder, so that it cannot be introduced into the rotation the same as the other crops. This being the case, one of the best plans for laying out a rotation is to have one field in alfalfa while the other crops rotate on the other fields. When these crops have made one complete circle, the alfalfa field to be broken up and another field put down to alfalfa.

A good mixed farmer's rotation is:—

- 1st Field—Summerfallow, Corn and Roots.
- 2nd “ . Wheat.
- 3rd “ . Wheat
- 4th “ . Oats and Barley seeded with Timothy and Red Clover.
- 5th “ . Hay.
- 6th “ . Pasture.
- 7th “ . Alfalfa.

At the end of six years the crops on the first six fields will have made a complete circle, the alfalfa field is then broken up, and another field put down to alfalfa.

### CHARACTER OF THE SOIL

Alfalfa requires a deep mellow soil if maximum crops are to be harvested. The alluvial river bottom lands of this continent provide an ideal home for this deep-rooted legume; large yields are invariably obtained on these areas. The crop can be grown on all types of soil, from the heavy clays to the coarser grained sandy soils; and it may even be cultivated on gravel soil, provided the subsoil furnishes a suitable reservoir for moisture, thus affording a complete and continuous supply for the crop. While a loose open soil is not the best type for alfalfa, the other extreme, an impervious subsoil, is sometimes a controlling factor, and root development may be interfered with materially. A friable soil makes the best home for alfalfa.

### DRAINAGE

Alfalfa has a long tap root and the plant can come to full development only in those soils which permit free and rapid growth in so far as the root system is concerned. If, however, water stands on the surface of the land, or comes within fifteen or eighteen inches of the plowed soil, it is safe to predict that the roots will be stunted; the crop yields will be comparatively small; and the plants will not survive their full number of years. The old saying that alfalfa will not stand “wet feet” is now a recognized fact. It is a mistake, therefore, to sow alfalfa seed on poorly drained land. The money invested in seed and the time spent in getting the field in readiness will be a total loss.

## TREATMENT FIRST YEAR

The field should be clipped with a mower when the alfalfa and weeds are about six inches high, and the clippings may remain on the field to form a mulch. This will hold the weeds in check. For the alfalfa it is best to have the cutting bar of the mower set so that it will not injure the crown of the plant. It is advisable to clip two or three times during the summer. The last clipping should not be later than the 15th August, because considerable growth should remain on the field as a winter protection.

## PASTURE

It is highly desirable to keep stock from grazing on alfalfa the first year. In fact, alfalfa should not be pastured excessively at any time, and no grazing should be contemplated until the crop is thoroughly established and the plant roots well developed. The field should be at its best the third or fourth year after seeding. Pasturing close the first year will have a tendency to injure the alfalfa crowns, and where the stock are allowed to run at will, the surface of the field may be roughened by tramping when the soil is wet.

## CURING ALFALFA HAY

There will be no hay the first year. The second year the alfalfa will be ready for cutting, and two crops will be available during the growing season. To get the best quality of hay the cutting must be done when the plants start to blossom which will be the latter part of June the first time, and early in August for the second time. It may be well to repeat that the crop should not be cut late in the season. In curing the hay, care should be taken to save as many of the leaves as possible. Alfalfa should not remain exposed in the swath for any length of time. When partially cured it should be placed in small cocks, remaining in this position until cured thoroughly, at which time it can be placed in the stack, or mow.

## SEED PRODUCTION

Where seed is to be produced a hardy variety such as Grimm should be used. The seed should be sown in drills thirty inches apart and inter-tilled to control the weeds. Other than this it should receive the same treatment as for fodder the first season. The second year seed can be produced. After the pods are nearly all ripe the crop can be cut with a mower having two or three men following with forks rolling the alfalfa into bundles and placing them out the way of the horses the next round. When it has become thoroughly dry it is ready to thresh. This can be done to best advantage with a clover huller. Where one of these cannot be obtained, the alfalfa can be put through the grain separator, some of the seeds will be threshed but most of the pods will be unbroken. Some of the best farmers report success in running these pods through the feed grinder with the plates not set too close. After the pods are broken the seed can be cleaned through a faning mill.



Alfalfa Plot in Central Manitoba



