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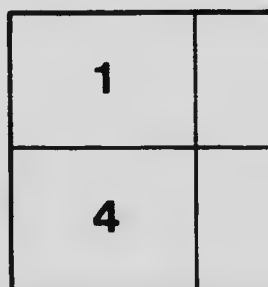
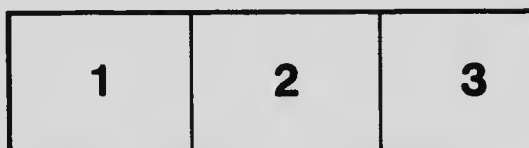
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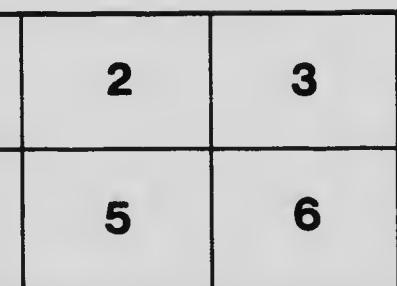
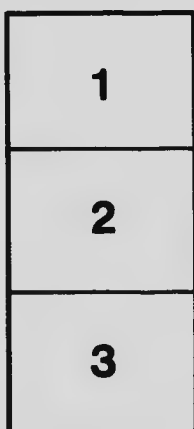
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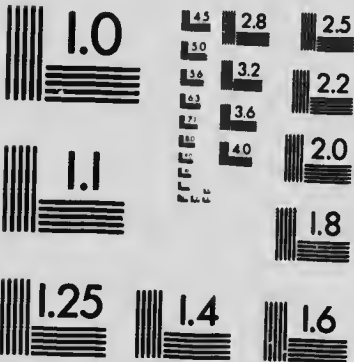
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MANITOBA AGRICULTURAL COLLEGE

*Field Husbandry Department.***Alfalfa or Lucerne**

Of late years there has been a greatly increased interest in this plant throughout the North-West. There are several reasons for this. In the first place, large areas of land once given over to pasture and the growing of native hay have been drained and brought under cultivation, thus reducing the supply of fodder. Then, again, farmers in the earlier settled portions of the West are beginning to realize that some active steps must be taken to replenish the nitrogen and other elements of fertility so rapidly disappearing under the present system of almost exclusive grain growing, and there appears to be no more promising means to this end than to grow some hardy legume suitable to this country.

The Plant.

Alfalfa is a perennial plant of the order Leguminosæ. This order includes such plants as peas, beans, clovers and vetch, all of which have their seed in pods and keel-shaped blossoms. The plant of alfalfa is more upright than the true clovers, having smooth branches and growing to a height of about three feet. The blossom is purple in color and hangs in clusters. The seed-pods are very unusual in appearance, being spiral shaped, each pod containing several kidney-shaped seeds. These seeds are yellowish brown in color and somewhat larger than the seeds of the red clover. The alfalfa plant is a deep-rooted perennial, having a tap root with lateral feeders. From the crown joint above the surface of the soil there arise many stems, varying from six to seventy or more, depending on the age of the plant and the system of culture. Its won-

derful root development makes it remarkably drought-resistant, which is a very desirable feature for many parts of the Canadian West.

Alfalfa is one of the greatest of all-around forage plants the country has ever known. In the United States it was found that calves fed on alfalfa hay gained nearly twice as much as those fed on prairie hay. It took seventeen pounds of prairie hay to make one pound of gain as compared with ten pounds of alfalfa hay. At the Brandon Experimental Farm last winter the steers that had their grain ration reduced by three pounds and got in its place alfalfa hay looked just as well as the others, and made practically the same gain and made the gains more economically.

Alfalfa is an excellent milk producer. Each ton of alfalfa fed to cows has been found to produce a milk flow of 834 pounds over and above the milk flow of the same cows fed on an equal quantity of timothy. In other words, with timothy at \$10 per ton, alfalfa would be worth over \$20 a ton. It is also useful for pasturing swine if a small quantity of grain is fed at the same time. It is also used largely as hay for feeding horses and sheep.

The alfalfa plant greatly increases the fertility of the soil wherever grown. By means of the bacteria associated with the alfalfa, the plant is able to utilize the raw oxygen of the air as a plant food, thus adding large stores of nitrogen to the soil at the same time that large quantities are being removed in the hay crops.

Most Suitable Soil.

Alfalfa thrives best on a well drained sandy loam soil, but will succeed on any good wheat land, provided it is well drained. It gives fair results where the subsoil is largely sand or gravel, providing it holds sufficient moisture to support the roots of the plant. It will not succeed in cold, wet soils where the roots are likely to stand in stagnant water at any season of the year.

How to Prepare the Soil.

Summer fallowed land free of perennial weeds is the best preparation. Field roots also leave the land in good shape for alfalfa. Fair results have sometimes been obtained from spring plowed stubble, provided it is free of weeds and moist. Both Canada thistle and sow thistle

are objectionable among alfalfa, and couch grass greatly reduces the yield.

Kind and Amount of Seed.

Grimm's and Turkestan are the best varieties for this country. It should be clean, sound and of high germinating quality. It takes from fifteen to twenty pounds of seed per acre, depending on the quality of the seed.

How to Sow.

In this country it should be sown from May 15th to June 1st. The best way to sow alfalfa is to mix the seed with twice its bulk of chopped wheat, from which the flour has been removed by passing it through a fanning mill. By this plan the mixture can be sown with the ordinary grain drill and the quantity of seed carefully regulated. The grain drill may be set to sow from three to four pecks of wheat, depending on the kind of drill. The seed should be placed from one to one and a half inches below the surface. Broadcasting deposits the seed very unevenly and should not be practised.

Soil Inoculation.

Although it may not always be necessary to do so, it is nevertheless advisable to spread one hundred pounds of soil from a well-established alfalfa field on each acre sown, so as to make sure that the bacteria so essential to the healthy growth of alfalfa is present. This soil can be obtained from the Manitoba Agricultural College or the Experimental Farm at Brandon free of cost.

When and How to Harvest.

No crop should be harvested during the year of sowing, but should be clipped with the mower two or three times to destroy annual weeds before they seed. This treatment will also cause the alfalfa plants to send up additional stems from the crown and thus greatly improve the stand. The following season it must be cut for hay just as soon as the first blossom shows. If allowed to reach full bloom the plants will become woody, and, besides, the second cutting is thereby greatly reduced in bulk. It is the usual practice to make two cuttings each year, and this can be continued for at least six or eight years without re-seeding. Should it become necessary to sow some other crop on the land, there

is no difficulty in exterminating the plant. One careful plowing followed by a discing will usually do this.

Winter Killing.

If the plants are pastured closely late in the fall, snow will not lie and there is great danger of winter killing. For this reason each field should be well fenced from the start.

S. A. BEDFORD,
Professor of Field Husbandry.



