

tion of lustre that is shown by the southern-grown seed.) It should be secured from reliable growers who have clean farms. If said growers are members of the Ontario Experimental Union or some association which is making a specialty of handling alfalfa, the purchasers will be more assured of quality. It should be produced in as nearly similar soil and climatic conditions as it will have to grow under.

In the selection of seed second in importance to the above is the question of purity. The noxious weeds found in this crop are:—

Dodder (*Cuscuta*—many species.)

Ribgrass (*Plantago lanceolata*).

Rag Weed (*Ambrosia artemisifolia*).

Docks (*Rumex*—species).

Sweet Clover (*Melilotus Alba* and *Officinalis*).

Yellow Trefoil (*Medicago lupulina*).

Many weeds of minor importance are also found in the seed.

SOILS AND SOIL PREPARATION.

Alfalfa may be grown on a wide variation of soils, in fact only two conditions are positively against its growth, namely:—

1. Wet soil and wet subsoil.
2. Acidity.

This crop positively will not grow on low, wet undrained land. The soil, which is in this condition, is too cold and sour consequently this legume does not attain such a vigorous growth. The air which must circulate about the roots is cut off owing to the saturated state of the soil and the plant smothered. However, should the season be favorable and the seedlings live till the following spring they will then be destroyed. The frost will heave the plants breaking off many of the roots and rootlets. The chief means of sustenance is thereby cut off from the plant, it starves and immediately dies. Alfalfa will not withstand water lying on the surface

for any length of time and prefers the water-table at least six feet below the top of the ground.

The second condition—that of acidity—is due to the continual growing of a certain crop for many years on the same land thereby depleting certain plant foods especially lime. The simplest test to determine this point is to make a deep slit in the ground with a knife and into the incision thus made insert a piece of blue litmus paper. Press the earth against the litmus and leave for a few hours. If at the end of that time the paper has changed to a pinkish caste it is proof of acidity and lime must be applied to neutralize this condition. Five hundred to one thousand pounds per acre is sufficient to remedy matters.

Another of the essential points in growing Alfalfa is the preparation of the soil previous to sowing. There are four recommended methods, each of which has its champions.

The first method is the summer-fallowing of the area to be seeded until August 20th, when wheat is sown. In the spring, just before the last of the snow has disappeared from the field, sow the seed broadcast by hand or hand-seeder over the surface. This method has many advantages provided the fallow has been well taken care of during the summer and clean seed wheat has been sown. The weed seeds have germinated and the weeds have been killed by the cultivation. This frequent tillage has also liberated much plant food which was in an unavailable form. On the other hand the wheat crop will rob the young alfalfa of the moisture during the time this nurse crop is growing, although it will also shield the young plants from the scorching sun during June. But the greatest objection to this method is that the best conditions are not given