

present, it is quite evident that the soil is lacking the proper organisms. These, however, can be brought to the soil either by the application of inoculated soil from other fields, or by the artificial inoculation of the seed. For fuller information regarding this interesting and important phase of Alfalfa-growing, the reader is referred to the report of Prof. S. F. Edwards, as presented in the Ontario Agricultural College Bulletin No. 164.

The first experiments in the inoculation of seeds of leguminous crops were conducted at our College in 1897, when materials containing the nitrogen-fixing bacteria were imported from Germany. At a later date other experiments were conducted with the bacterial preparations obtained from Washington, and still later with those manufactured at our own College. Although we took great care in the experiments, no perceptible advantage in the yield of crop was obtained from the use of the different cultures. This was evidently due to the fact that the soil in the experimental grounds was already well inoculated, which was made quite apparent by the presence of an abundance of tubercles on the plants each year.

#### SOIL, SEED, AND SEEDING.

For the best results with Alfalfa, not only is it important to select land that is in a good state of fertility to enable the young plants to get a proper start during the first year, and that has a deep, sweet, subsoil with moisture surrounding its particles and with air between them to enable the Alfalfa roots to spread in various directions in search of moisture and of plant food, but it is also important to select land which is comparatively free from seeds and roots of weeds and of other troublesome plants, in order to give the Alfalfa full possession of the soil. We find that the Canadian Blue Grass, in particular, is apt to cause some trouble in growing amongst the Alfalfa plants at the College and in other parts of Ontario, unless the soil is thoroughly prepared before the seed is sown. In all cases, the soil should be well cultivated and a fine seed-bed formed, in order to permit of a quick and a uniform germination of the seed after it has been sown.

The quality of the seed is of vital importance. It should be large, uniform, and bright, of good vitality and free from impurities, especially from seeds of weeds and of other plants which are troublesome in a field of Alfalfa. It is wise to secure a sample before the bulk of the seed is purchased. This can then be examined and if the seeds are large and uniform, are free from seeds of sweet clover, yellow trefoil, etc., and will germinate well when placed between sheets of moist blotting paper or in a box of sawdust which is kept warm and moist, the larger bulk can then be ordered according to sample. The bulk lot when received should also be examined in order to be sure that it is the same as the sample previously examined. A little care in this way may avoid a total or a partial failure of a crop, and also the introduction on the farm of weeds which are difficult to eradicate.