

It will be observed that the results obtained from the seed of the Turkestan Alfalfa which was obtained in America were decidedly lower than those obtained from the seed of the Turkestan Alfalfa obtained from Turkestan through the Department of Agriculture at Washington.

The plots which were sown in the spring of 1905 from seed produced at the College in 1904 and in 1903 gave quite similar results to the first quality of the commercial seed grown in the United States. It should be stated, however, that both the seasons of 1903 and 1904 were unfavorable in Ontario for the production of Alfalfa seed of average quality. It should also be taken into consideration that the seed produced in 1903 was over a year old when it was sown in the spring of 1905.

It is interesting to observe that the greatest yield of cured hay per acre was produced by seed obtained from the northwestern part of Texas. The yield of the green crop, however, was greater from the seed obtained from Khiva, Turkestan, than from that obtained from any other source.

Although the germination of the seed obtained from Arabia and from Peru was excellent, and the crop in each instance was very promising in the autumn of 1905, the plants of the Peruvian Alfalfa were completely killed, and those of the Arabian Alfalfa were mostly killed before the following summer. Both these strains of Alfalfa are giving particularly good results in the southwestern part of the United States, but owing to their acquired habits of growth prove to be exceptionally tender in Ontario.

In 1907, the second crop of Alfalfa, on each of the plots here referred to, was allowed to go to seed. It was the desire to obtain seed of these different strains in order to continue the experiment, and to ascertain whether or not the seed obtained from the most productive kinds would continue to produce the best results. We hope that in time we shall be able to produce in Ontario a good supply of seed of the very best strains of Alfalfa.

INOCULATION.

It is a well established fact that leguminous crops, such as Alfalfa, Sainfoin, Clover, Peas, Beans, and Vetches, thrive best when they are grown in the presence of a certain species of bacteria. These micro-organisms, when present in the soil, enter the roots of the plants, forming enlargements or nodules on the roots. These very minute forms of life make use of the free nitrogen of the atmosphere, which is thus transferred to the plants, making them decidedly more valuable both in food constituents and in fertilizing materials. Each of the crops here referred to requires bacteria peculiar to itself. It is possible for Alfalfa to grow fairly well without the presence of these minute forms of life, by making use of the nitrogen already in the soil. Their presence, however, seems to have the double value of increasing both the quantity and the quality of the crop. Whether or not the proper bacterial forms are in the soil, can be ascertained by growing a small amount of Alfalfa and examining the roots for the presence or absence of the nodules. If no nodules are