

habit, gradually deepen the plant food-producing soil layer, and also the moisture reserve area. The humus and nitrogen content of the soil layer penetrated by the roots is also greatly increased by the vigorous root development and associated nitrogen gathering bacteria. The amount of nitrogen brought to the soil from the atmosphere together with the phosphorus and potash brought from the lower subsoils to the surface layer are sufficient to make alfalfa growing worth while if considered as a soil improvement crop only.

PREPARING THE SOIL FOR ALFALFA.

The successful alfalfa grower believes in planting on a deep, fertile, naturally well drained soil, that is abundantly sweet; he believes in lime applications, in supplying inoculating bacteria, in row seeding and tillage. It is very easy to establish alfalfa on a deep soil that gives root room, plant food, moisture and air. On soils that are not very hospitable to plant life, good stands have been established by persistent effort and care. The range of soil on which alfalfa will flourish is very wide, but favourable conditions for bacterial life of the aerobic class are of the greatest importance. Any land that is too wet or otherwise unsuited to the growth of common red clover should not be used for alfalfa. Select land on which you know red clover would do well; if it is not in good condition, prepare it by growing some cultivated crop like potatoes or mangels for one or two seasons. The land will be cleaned in this way and the soil improved in tilth. Plough deeply in the autumn, apply lime to the rough ploughed surface if needed, and harrow in. An application of 2,000 pounds of lime per acre is generally sufficient for the first five years. In the spring, as soon as the land is dry enough to support a team, the land should be thoroughly cultivated and then left for a few days until the surface is dry enough to harrow well. If soil from another alfalfa field is available, it is advised to apply such to the extent of 300 pounds per acre and harrow well in. This soil inoculation is best done on a dull day. After thorough harrowing, any rubbish, stones or roots should be removed and the land rolled firm and smooth, thus completing preparations for seeding. Land that has good natural drainage only should be used. The vigorous root development of alfalfa will in time block the drains, so it is not advised to plant alfalfa close to lines of tile.

THE SEED.

Of the numerous varieties and strains of alfalfa tested at the experimental station for Vancouver Island, the Ontario Variegated has been the most satisfactory. It has proven to be vigorous, erect in habit of growth, early to start in the spring and a late autumn grower. The Grimm alfalfa has been very successful; it has all the good qualities of the Ontario Variegated excepting that it is not as erect a grower and therefore not as suited to row culture at distances greater than eight inches. The yellow flower types or Cossack alfalfa have proven vigorous under coast conditions, but not desirable in type or yield, being recumbent in growth habit and light yielders of leafy fodder. Seed grown in districts that have a climate similar to, or at least not any milder than the island districts of British Columbia, is to be preferred. Seed that is usually designated northern grown has proven very desirable. High grade, plump seed only should be used. The Weed Control Act protects the alfalfa seed purchaser against weeds excepting the Russian thistle. Seed purchasers are warned against this weed. Alfalfa seed that has been scratched or scarified, either during or after the process of threshing, will germinate more readily than seed with an unscratched seed coat. When the seeding of a small or large area is contemplated it is advisable to make sure that the hard seed coat is in condition for moisture to penetrate and start germination after planting. Small quantities of seed can be scarified by using a wooden bucket that is lined with sandpaper, putting the seed in such and stirring vigorously for ten minutes with a spoon or stick, the end of which