

moderately moist and at the same time well aerated soil but is unable to thrive in water clogged soil where free circulation of the air has been made impossible or difficult.

It should therefore be sown only on well drained land where excessive water can be promptly and rapidly carried off.

On poorly drained land or low land subject to be flooded for even a short time, alfalfa is likely to be a complete failure.

Sour soil also should be avoided. It is quite unsuitable to alfalfa, unless the acidity can be neutralized by a liberal application of lime.

As an alfalfa field, when once well established, continues to produce crops for many consecutive years, it follows that alfalfa has no place in a short rotation. It is therefore advisable to choose, for alfalfa, a convenient sized field which does not form part of the regular farm rotation, preferably close to the farm buildings.

Soil Preparation.

To insure a good stand the land selected for alfalfa should be:—

1. Stored with an abundance of plant food.
2. Free from weeds.
3. In excellent physical condition or tilth.

These conditions can be secured in different ways depending on the nature of the previous crop.

If the land selected for alfalfa is in clover sod or meadow it should be ploughed shallow and rolled immediately after the hay crop is harvested. A short time later it should be thoroughly disced and harrowed, and then cultivated at frequent intervals to keep down all growth. The cultivating should be continued until late autumn. In October, the land should be ploughed again with a subsoiler attached to the plough, or ploughed with two ploughs, one without a mould board following the track of the other and stirring the subsoil as deeply as possible.

Instead of the land being ploughed and subsoiled as advised above, it may be cultivated deeply lengthwise, crosswise and angling with a strong stiff-toothed cultivator, to be followed by a double mould-board plough, leaving the whole field in ridges about 7 inches high and 22 inches apart.

In the spring following, the ridges should be split with the double mould-board plough, then thoroughly harrowed and rolled before sowing, making a perfectly fine and at the same time firm seed bed.

If the land selected for alfalfa is in hoed crop, it would be advisable to plough, when the crop has been harvested, as deep as the humus and the plant food in the soil will allow, or, still better, to plough shallow and subsoil as deeply as possible, leaving the furrows well set up to the winter frosts.

In spring, when the land is in fit condition, it should be harrowed at intervals and thus kept free from weeds. After the last harrowing, i.e., just before sowing, a heavy land roller should be run over the land to insure a firm seed bed.

Should any growth of weeds appear at the seeding time it would be advisable to plough the land shallow, roll and harrow just before seeding.

Inoculation.

For a healthy, vigorous and lasting growth of alfalfa, it is necessary that a certain kind of bacteria is plentiful in the soil. The bacteria in question live in a kind of association with the alfalfa plant and act as collectors of nitrogen, which in some way, not yet fully understood, is utilized by the alfalfa plant.

Wherever there is a good stand of alfalfa, there is also an abundance of the alfalfa bacteria in the soil.

In soil which has not grown alfalfa before, the bacteria may either be wholly absent or present in too small a number to insure a vigorous growth of alfalfa from the start. In this case the bacteria should be introduced into the soil artificially.