

that lucerne requires much more complete drainage of the soil than do other field-crops. Fortunately, only a comparatively small acreage of such soil exists in Central Otago, and where such is the case farmers will be well advised to establish permanent pasture in preference to lucerne. It is perhaps opportune to here mention that waterlogging of the soil through deficient under-drainage or over-irrigation rapidly leads to the destruction of lucerne. Seepage from water-races should therefore be looked to and prevented, particularly during the winter months.

Lucerne thrives best in a non-acid soil, and in its establishment lime is frequently applied to bring about such a condition. Generally speaking, the necessity for liming does not exist at present in Central Otago, and unless a farmer knows that his soil has a high lime-requirement there will in all probability be little need to carry out this operation. The application of lime, however, may be regarded as highly beneficial in general, and, where economic conditions permit of it, a dressing of approximately 1 ton per acre of carbonate of lime (raw ground limestone) is advised.

PREPARATION OF THE LAND.

On account of the smallness of lucerne-seed and the tender nature of the young plant a fine firm seed-bed is advocated. It is generally advisable to select, if possible, a piece of land which is comparatively free from weeds, or land which has grown a cleaning-crop during the preceding season. Such land is best put under the plough during the autumn, so that it will be open to the beneficial effects of the winter frosts. If ploughing is delayed later the ground may become too hard to plough satisfactorily. Deep ploughing is advised, provided too much gravel is not brought to the surface. Where only a thin layer of schist soil exists skim-ploughing should be resorted to. The land should be well worked up in the spring with a view to obtaining a fine seed-bed and preventing weed-growth. This may necessitate cross-ploughing, a double cut with disk cultivators, and double harrowing.

Too great emphasis cannot be laid on the desirability of carrying out the proper levelling of the surface of the land prior to sowing. How this is accomplished has already been described in a previous article, and it will be to the farmer's interest to put this recommendation into practice. The permanency of the lucerne crop well merits careful preparation of the land, and of all the operations which go to constitute this none will prove more economical than that of levelling. High dry spots and low oversaturated ones will thus be eliminated, and the field will be more evenly and more expeditiously irrigated. It is of importance that the preparation should be uniformly good, as poorly prepared portions are subject to failure. Such bare places form centres from which weeds may spread, particularly grasses, and these may ultimately destroy the whole stand.

TIME OF SOWING.

The months of November, December, or January are probably the most suitable for sowing lucerne. When it is sown early in the spring weeds prove extremely troublesome, particularly fat-hen