

(*Chenopodium album*) and sorrel. It is of decided advantage to delay sowing until the first crop of spring weeds has germinated and has eventually been killed by cultivation. Fat-hen is not to be regarded as a very serious weed in lucerne stands in Central Otago, provided it is not too thick while the crop is in its young stage; it disappears with the cutting of the lucerne. By delaying the sowing until at least November, and keeping the ground well cultivated periodically, this trouble will be greatly diminished.

When lucerne is sown in the autumn the young plants are liable to be badly damaged by the ground "lifting" during the frosty winter months; consequently autumn sowing is not recommended.

SELECTION OF SEED.

Under no circumstances should cheap seed be sown. Such seed is likely to contain a high percentage of harmful weed impurities, and is in addition liable to be of poor germinating-power. The best seed possible should be obtained, and fresh season's seed asked for. There are many varieties of lucerne-seed on the market, but for Central Otago conditions the writers are satisfied that New-Zealand-grown Marlborough seed is very satisfactory, and consequently this variety is recommended. Much has been heard lately of the Grimm variety, but there appears to be no sound reason why this should be sown in preference to Marlborough, particularly when its price is more than double that of the latter. The main characteristic which has made Grimm's lucerne largely grown in certain parts of the United States is its capability of living through severe winters; but winter killing of lucerne does not concern us in this country. One looks forward to the production of lucerne-seed in Central Otago itself in the course of the next few years, and when such takes place locally grown seed should undoubtedly be used for the establishment of new crops.

METHODS OF SOWING.

The manner of sowing the seed will vary according to the implements at the disposal of the farmer. One thing, however, is of great importance. If the soil has not sufficient moisture to germinate the seed and allow the young plant to grow to about 4 in. in height a preliminary irrigation should be given before sowing. Irrigating after sowing is bad practice and results in the caking of the soil, with consequent poor germination.

The best method of sowing is by the ordinary grain-drill with a lucerne-seed attachment. Failing this, the seed may be sown through the manure-spout of the ordinary drill, by setting the drill to sow, say, 1 cwt. of manure, mixing the seed with 1 cwt. of basic superphosphate, and so conveying the correct mixture of manure and seed to the soil. By this method successful stands of lucerne were obtained at the Galloway Irrigation Farm. Where the drill is used great care should be taken not to sow the seed too deeply. The depth will depend somewhat on the character of the soil. Covering to $\frac{1}{2}$ in. on the heavier types of soil is usually ample, but on the lighter types, which are likely to dry out quickly, up to 1 in. is desirable. The seed should be sown at the rate of not more than 15 lb. per acre. Many quite thick stands have been obtained from sowings of as low as