

further working with disks and harrows should be completed in mid-spring. Such working gives reasonably good fineness, after which a roller can be used freely to obtain good consolidation. Where a roller is not available, use is occasionally made of stock to tramp the proposed lucerne field after the cultivation has been completed.

RATE OF SEEDING.

Where seed is being broadcast it is customary to sow from 20 lb. to 25 lb. of seed an acre, and occasionally seedings range up to 30 lb. per acre. If drilled, the usual sowing is from 16 lb. to 18 lb. per acre. With these heavier sowings good strikes are obtained, but there is a tendency to overcrowding. Tillering is restricted, weakened plants are common, and frequently there is fairly high plant mortality in the first year or two. The object underlying heavy seeding is to smother weeds, but measures to eliminate weeds prior to sowing would give better results. This could be accomplished by somewhat later sowings following continued cultivation to destroy seedling weeds as they appear. Under this method of preparation suitable seedings would be provided by 18 lb. to 20 lb. an acre broadcast and 14 lb. to 15 lb. an acre in 7 in. drills.

METHOD OF SOWING.

The usual practice in the Bay of Plenty is to broadcast seed through a top-dresser, the seed being previously mixed with carbonate of lime or a mixture of superphosphate and lime in equal proportions. Where the areas are very small they are often hand-sown. In a few instances an ordinary grain drill is used, but, in view of the fact that little cropping is practised, few drills are available. Fortunately, lucerne establishes well when broadcasted on Bay of Plenty soils. In the Waikato, however, drilling of the seed appears to be essential to success: the usual practice in this district is to sow about 16 lb. seed per acre, drilling half the seed in one direction and the rest across the first sowing. Broadcast stands in the Waikato are often unsatisfactory the second year after establishment.

INOCULATION OF SEED.

There is little doubt of the necessity to inoculate lucerne in South Auckland districts. Numerous instances of failure resulting from sowing untreated seed could be quoted. Since the introduction of the Department of Agriculture's culture for treating seed, this material has almost entirely superseded other cultures and the soil-method of introducing bacteria. In view of the fact that stem rot (*Sclerotinia* sp.) causes widespread damage on many lucerne-fields in South Auckland, it is always dangerous to use soil as the means of inoculating a further lucerne area. This is being appreciated by the farming community, and has led to a definite preference for the inoculating cultures.

MANURING.

The usual practice is to sow from 5 cwt. to 1 ton of carbonate of lime an acre a week or so before seed-sowing. This is followed by 3 cwt. to 5 cwt. of superphosphate an acre either just prior to or immediately following the sowing of seed. A good proportion of farmers sow the superphosphate mixed with lime together with the