

Preparation of Seed-beds for Autumn-sown Grass

SEASONAL NOTES

Contributed by the

EXTENSION DIVISION

SUMMER following preparatory to the sowing of permanent pastures in autumn is now fairly common in New Zealand. It is often carried out in the all-grass farming districts of the North Island when worn-out permanent pastures are renewed by the grass-to-grass method, and in arable farming districts when the aim is a firm, moist seed-bed for late-summer or early-autumn sowing.



To secure full benefits from the drainage of heavy land it is usually necessary to plough under the old turf and resow the land to grass. Sowing after a summer fallow is the best method.

ONE weakness of the grass-to-grass method of renewing pastures in the North Island is that the seed-bed is not firm and clovers do not strike if the preparatory cultivation is delayed until just before the seed is sown. On light land the requisite degree of firmness may be obtained with repeated heavy rollings, but on heavier land natural consolidation through fallowing is necessary to give a firm and moist seed-bed.

Most Certain Method

The grass-to-grass method of renewing permanent pastures is best carried out by shutting up the field for an early crop of silage and then ploughing in late November or early December while the land is still moist. As much land as is ploughed each day should be surface cultivated with harrows and discs so that it is broken down while moist and not allowed to bake and harden in the sun. During the summer the land should be worked periodically, and the several months of fallow will allow complete rotting of the turf and the formation of a moist and firm seed-bed for early-autumn sowing.

Taking a summer fallow is the most certain method of securing a satisfactory strike of grasses and clovers, because the fallow brings the land to a high state of fertility; it is then rich in available nitrogen and is moist and firm. After a fallow pasture seed may be sown as early as the occurrence of rains in late summer and early autumn allows. As the soil temperature is high in late February and early March, grass and clover plants make rapid growth and the first feeding off may be obtained in late autumn before the land becomes wet and stocking difficult.

Renewing Inferior Pastures

Renewal of inferior permanent pastures on ploughable land offers considerable scope for increasing primary production. Large areas of the 7 or 8 million acres of land sown to grass after being ploughed were established before supplies of Certified pasture seeds were available, and probably 2 to 2½ million acres are in inferior swards which, even with regular topdressing, are not capable of maximum production unless high-producing strains of perennial ryegrass and white clover are introduced. Fertilisers and seed are now available for an expanded pasture-renewal programme, but as labour, seed, and fertilisers are costly, renewal is warranted only if the new pasture is better than the old.

Faulty seed-bed preparation causes many failures. If the seed-bed is not firm, moist, and warm, the strike is poor and gives an unsatisfactory basis for a productive pasture.

Three Main Methods

There are three main pasture-renewal methods: Surface cultivation followed by broadcasting of seed and fertiliser; ploughing and direct reseeding; and sowing to grass after the taking of a fodder crop.

Surface cultivation and seeding succeeds only where the lightly-broken surface soil provides a satisfactory seed-bed. It is most successful on light, moist soils, but may not be at all satisfactory on pastures with a complete turf which the surface cultivation does not open up sufficiently or where the surface soil is naturally hard and dry.

Breaking out of grass, taking a fodder crop, and then reseeding to grass is satisfactory provided that the pasture may be spring sown after a winter forage crop or, if taken after summer forage, that the crop is off the land early enough to allow early-autumn sowing. However, spring sowing is not suitable in many districts, and rape and soft turnips are usually the only summer fodder crops that are finished early enough to allow early-autumn sowing.

Sowing after a summer fallow is probably the surest method of providing the firm, moist, and warm seed-bed required for autumn grass sowing.

Centuries-old Procedure

The summer fallow is, of course, the oldest known method of soil-fertility maintenance and was used for many centuries to maintain cereal production on arable land. It still has its uses for this purpose, and a recent survey of wheat production in the vicinity of Christchurch showed differences in yield of up to 38 bushels per acre between wheat crops taken after a summer fallow and those that were not.

Its value to grass is similar to its value to a cereal: Soil fallowed during summer is enriched in nitrogen, and consequently the initial growth of the young grass is vigorous.