

swedes, invariably with very excellent results. After the swedes are eaten off the land is either disced or ploughed and sown to a permanent pasture. This method was largely and successfully adopted by the pioneer farmers.

At the present time, where fern and tutu country is adjacent to pasture land, surface sowing following burning is successfully practised. Having available pasture feed close at hand, stock can be put on in large numbers to crush the fern and consolidate the surface, and at the same time continuous close grazing can be avoided. On the undulating and level lands, which come under the heading of ploughable lands, cultivation must be preceded by cutting and burning of the scrub. Clearing costs can be reduced considerably if the scrub is burnt two years ahead of cultivation.

There are two methods advocated in the cultivation of these lands—(1) Surface discing and cultivation for the seed bed, (2) ploughing plus cultivation. The discing advocates maintain that the surface working retains the natural soil consolidation, but experience has proved that a good standard method of preparatory cultivation for

pasture establishment is to plough with a lea mouldboard plough 5 to 6 inches deep and fallow for four or five months to allow complete weathering and aeration. The land is then rolled in the direction of the ploughing. This rolling on the furrow is important in bringing about good consolidation. After rolling, the land is double disced, which should also follow the direction of the ploughing. Chain harrows are used to fine the seed bed and level the surface. The land is again rolled before the seed and fertilisers are sown, and if time allows, again rolled after the seed has been covered with the chain harrows. Ploughing is advisable in the preparation of the seed bed, and ploughing by bringing to the surface the unweathered pumice from below and mixing it with the surface soil gives a much better soil for pasture production than surface cultivation.

The tendency appears to be much adverse to bringing up the underlying pumice to the surface by ploughing. This point is worthy of careful consideration. In the ploughing of virgin pumice lands, a ploughed field often presents a mottled appearance due to irregular scattered patches of white

pumice blended with the main dark humus colour of the ploughed land. The natural trend is to consider that these white areas of pure pumice soil are sour and not productive of plant life. Pumice is highly absorbent, and, lying under the surface for many years, absorbs soil water which contains plant food collected from the decayed vegetation of the surface and the dissolving of the soil particles. Pumice which is brought to the surface rapidly disintegrates, and by oxidation changes to a darker coloured soil in a remarkably short time. This factor is often remarked on by farmers in the cultivation of these pumiceous soils, and it is for this reason that pioneer farmers of long experience advocate ploughing to a depth of seven inches as against the usual five inches.

Methods for Sowing

On pumice soils the farmer is fortunate in that, following the clearing of scrub on virgin lands, he has different methods at his command in preparing the land for permanent pastures, because of the soil being so easily worked. All are simple and entail no heavy, tedious labour, and pasture establishment is reasonably quick.

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