



## **Establishing pastures - Readers' Note**

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# Conventional seedbed preparation

Timeliness of killing perennial weeds is very important in preparing a seedbed. Weeds can generally be categorised into winter annual weeds (which grow from March to October), summer annual weeds (which grow from October to February) and perennial weeds. Ploughing the paddock from March to May will greatly reduce the winter weed seed problem but it will not affect the summer and perennial weed seed problem. Summer weeds need to be tackled a year before a planned spring sowing.

Absolute weed control must be the ultimate aim of any seedbed preparation.

Seedbed requirements will vary according to the pasture species to be established. For example, lucerne and kikuyu require a very good seedbed, but ryegrass does not.

A good seedbed is a flat, uniform paddock with a small and even clod size (< 1 cm) and uniform soil moisture near the surface. There is a fine line between establishing a seedbed and overworking the soil. An overworked soil is very fine and can be prone to soil crusting and lack of surface moisture.

Soil should always be moist but not wet when worked, so that it crumbles. Ploughing wet or dry ground is pointless and can damage soil structure. Weeds will germinate in a moist soil after ploughing and will then be killed 2–3 weeks later when the soil is ploughed again.

The preparation of a paddock will take 2–5 workings. Make each working more shallow than the previous one. Initial workings, preferably with tined implements, will break up hardpans, increase water infiltration and minimise inversion of the subsoil. For autumn-sown pastures or spring-sown summer forage

crops, allow at least 2 cultivations before sowing permanent perennial pastures.

A soil that has a major weed problem will need more workings over a longer period of time. It is important to use implements that will not overwork the ground. For example, a rotary hoe pulverises the soil—more than 2 workings will create a very fine seedbed and a loss of soil structure. Working with an offset disc, harrow or scarifier is preferable. It is important to minimise the number of cultivations.

Ploughing has a role, especially in heavier soils, in rough, pugged paddocks, and in paddocks with heavy burdens of tussocky grass. Always plough on the contour to minimise erosion. Ploughing is not recommended for shallow soils or steep slopes.

Secondary tillage can be done with discs, tines or heavy harrows. The aim is to even up the seedbed and to control germinating weeds.

Rolling can be useful to break up large clods or, before sowing, to firm a ‘fluffy’ seedbed, aiding accuracy of seed placement. Do not use a roller after sowing on soil that crusts on the surface.

## Seedbed preparation with fodder crops

In many cases, one or two clean-up crops of oats, brassicas or short-term ryegrasses are used to help break down weed residues and seed burdens and to provide valuable fodder. Heavy grazing during summer will reduce winter-growing annuals and allow weed seeds to germinate and be killed. Paddocks selected for spring sowing should be heavily grazed in winter to reduce trash levels before thorough cultivation.

## Herbicide use

Herbicides can be used to reduce the number of workings and improve the results on hard-to-kill perennial weeds such as couch and bent grass. Spraying in autumn can control weeds and replace a cultivation if the seedbed is already fine enough. Pasture topping or chemical fallowing in spring will replace or delay the initial working.

Spring sowings often require herbicides to kill weeds and allow rapid seedbed preparation in late winter – early spring. Without the herbicide, most weeds are simply transplanted. After spraying with glyphosate, wait one day for annual weeds and 7–10 days for perennials before ploughing, to allow the herbicide to move through the weeds. It is important to spray the weed when it is growing actively to maximise the effectiveness of the herbicide.