



## NZ Forage Systems Fact Sheet

# Oversowing hill country

### Key Points

1. Hard grazing before oversowing is essential.
2. Spraying with a sward suppressant is necessary to maximise seedling establishment.
3. Intensive stocking for 24-48 hours after oversowing is a practical method of increasing seed/soil contact and seedling establishment.
5. After oversowing, graze frequently from 1000-1200 down to 700-800 kg DM/ha for 12 months.
6. Monitor oversown areas intensively.
7. Keep any oversowing to a size that you can manage.



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### Pre-oversowing planning

The area to be oversown will require a change in management for at least a year before returning to 'normal' farm management. This plan must include:

- How the area selected will be integrated into the current farming system.
- Consideration of other options of improving animal productivity e.g. more fertiliser and increasing stocking rate, subdivision or an integrated approach to farm management e.g. "controlled grazing systems" approach.
- Fertiliser testing, species/cultivar selection and legume seed inoculation.
- Site preparation including application of a sward suppressant and hard grazing of the area before oversowing.
- After oversowing, tread with as many stock as possible for 24-48 hours.
- More frequent but shorter grazing after oversowing to control competition.
- Careful grazing over the first summer to ensure that plants are not grazed out.

### Area selection

It is easy to oversow too large an area which makes pre- and post-oversowing management difficult. If paddocks are too large to be satisfactorily managed, they may require subdivision before oversowing. Consider an oversowing trial in a representative 5-10 ha paddock that will provide valuable experience before carrying out a large scale operation.

### Evaluate other alternatives

Oversowing must be seen as an option along with other strategies as trials at Ballantrae (moist hill country) showed that adding fertiliser generally gave a greater yield response than introducing new pasture grasses.

### Fertiliser requirements

The area needs to have sufficient base fertility to sustain the introduced species. If necessary, ensure capital fertiliser application at or before oversowing.

### Species and cultivar selection

What is the role of the new sward? Choice of pasture species will be influenced by the level of fertility. If pastures are essentially unimproved, introduction of improved plants is unlikely to give a benefit. If pastures are moderately improved, oversowing with legumes should be considered. In a highly improved situation, grass introduction will be worthwhile. Where new species such as annual clovers or plantain are to be introduced, careful selection for plant type and the ability to manage flowering (for annual clover reseeding) is essential.

## Area preparation

Seedling survival from oversowing is affected by seed / soil contact and weather conditions, particularly wind and competition for space, light and moisture. Remove excess herbage that will compete with the establishing seedlings so as much bare ground as possible is available to the seeds being oversown. Seeds should fall on the soil surface and not within a thatch of vegetation. This is achieved by a planned approach to removing as much of the standing existing vegetation as possible by grazing and using herbicide to suppress or kill existing vegetation. In summer dry areas, consider spring application of herbicides followed by a summer fallow. This will enable time for stock to graze and further open up the sward and conserve moisture in preparation for the autumn oversowing.

## Inoculation

Inoculation with the correct strain of rhizobia is essential when introducing any new clover species into an area. Bare seed may be inoculated by hand on the day of oversowing by using a commercial inoculant. It is essential that un-chlorinated water is used when added to the peat (follow the instructions on the packet). Commercial coated seed and seed pellets (typically larger than coated seed) can be made up of many layers of compounds to protect the rhizobia in the inoculant from sunlight, desiccation and acid soil conditions. Coated seeds are particularly beneficial in drier sites where seed coats enable more rapid moisture absorption. Sow within 20 days of coating/pelleted. Sowing rates need to be adjusted to account for the extra weight of the coating.

## Oversowing methods

For all sowing methods, a light to moderate cross wind is advantageous in improving seed distribution.

- Helicopter - with seed bucket
- Helicopter – seed applied with fertiliser using fertiliser bucket
- Helicopter – with lime slurry plus seed
- Fixed wing aircraft - with seed spreader
- Fixed wing aircraft - seed applied with fertiliser

## Post-oversowing management

### Treading

Heavy stocking **within 1-2 days** of oversowing increases the seed-soil contact and the amount of bare ground. Trials have shown that treading increased the amount of bare ground by 20%, disturbed more soil and vegetation and reduced the amount of seed visible on the surface by 15%. This resulted in better establishment on steep slopes up to 6 months later.



### Monitoring

Germinating seedlings in oversown areas should be observed weekly for three to four months for insect or slug damage. Slugs, springtails and red legged earth mites have been known to completely remove oversown seedlings.

### Grazing

Oversown paddocks must receive special treatment. Grazing management must prevent seedlings being smothered by resident vegetation. The aim is not to damage establishing plants, yet to allow light to penetrate to them. This encourages individual seedlings to develop a high number of stolons and tillers. To reduce competition from resident plants, oversowing should be followed by set stocking which maintains covers of about 1000 kg DM/ha herbage mass, or by frequent on-off grazings for 12 months with a maximum pre-grazing herbage mass of 1200-1300 kg DM/ha and post-grazing residual of 700-800 kg DM/ha. To achieve this rotations need to be **twice** as fast as normal with more frequent light grazings. Newly oversown areas cannot follow the normal winter rotation for ewes, or be set-stocked at normal stocking rates from May to February.