



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Establishing pastures - Readers' Note

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<http://www.dpi.nsw.gov.au/agriculture/livestock/dairy-cattle/feed/publications/establishing-pastures>

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Plant populations

A newly sown pasture should contain only the species and varieties sown. The germination of the paddock should be uniform.

Plant populations at sowing

Species	N ^o seedlings per m ²			Comments
	Min.	Opt.	Max.	
Ryegrass	170	340	450	NZ and cooler climates
Kikuyu	10	100	300	
Lucerne	50	100	300	
Clover	70	150	350	Clover plants are difficult to count but their growth can be assessed by their cover.

In the first spring, a good perennial ryegrass – clover stand will have 140 ryegrass plants per square metre. After 2 years, 30–50/m² will survive, more in cooler climates. Counting ryegrass plants after the first 3 months can be deceiving as they produce tillers, having up to 25 each.

Careful management is required to maintain the balance between legumes and grasses to sustain the productivity of a mixed pasture. The best grass–clover balance for productive perennial pastures is about 60% grass and 40% white clover. This should give sufficient nitrogen fixation by the clover to sustain the productivity of the grass. Increasing the clover content further will increase the feed quality but will reduce the total amount of dry matter produced and the stability of the pasture.

Lucerne is often sown with ryegrass and clover because of its summer growth. However, it competes against them for

moisture, and selecting a grazing and irrigation interval that is suitable for all three is difficult. On the other hand, ryegrass dominates lucerne, and heavy ryegrass sowings will reduce the establishment of the lucerne.

Potential losses at establishment

Serious losses in pasture production can occur very quickly. This can mean not enough high quality feed for the milking herd. For example:

- slugs can eat out a very high proportion of clover seedlings in direct-drilled pastures
- cutworms and armyworms can cause serious productivity losses
- broadleaf weeds can establish with pasture seedlings and exclude the sown plants.

Provided treatments are applied at the correct time, all these problems can be controlled effectively. **Frequent careful observation** for potential problems, and timely remediation, can dramatically increase pasture productivity.

Regular inspections

Inspect the pasture regularly for any potential problems. Continue this observation for the life of the pasture. Inspect the establishing pasture at least weekly in the first 6 weeks. Proper management of problems diagnosed in this period can substantially increase the effective establishment of the pasture and hence its productivity.

Learn to read the pasture by asking many questions, including:

- Is the pasture growing as quickly as would be expected under the current conditions?

- Would the pasture respond to fertiliser application?
- Are there any obvious nutrient deficiencies?
- Are there any insects causing enough damage to the pasture to reduce Production? Check underground too.
- Is the pasture infested by disease?
- Is the grass–clover balance correct?
- Is the pasture at the correct stage for grazing?
- Should I graze or make hay or silage?

The only way these questions can be answered satisfactorily is by regularly checking the pasture in detail. Regular inspections can provide early warning of potential serious problems and allow for timely remediation.

The seedlings have germinated. What will help them to establish successfully?

- **Control weeds** while they are young with selective herbicides. Competition can severely reduce the establishment and survival of the pasture species.
- **Control pests** such as slugs and snails, which can severely reduce the number of seedlings.

Control of diseases, companion species and competition between annual and perennial ryegrasses is difficult by this stage. Using disease-resistant varieties and seed treatments for disease and the right sowing rate is the best prevention.

The seedlings have successfully established. What will maintain the population of grass and clover?

- **Control weed competition** later in the development of the pasture where possible with selective herbicides or mechanically. Larger and older broadleaf weeds are much harder to kill, and the herbicides used to control them can damage clovers.
- **Monitor pest and disease damage** and implement control procedures promptly where effective methods are available.
- **Manage competition between the sown species.** The grass seedlings will grow faster than the clover seedlings. Control grass growth by judicious grazing, which will allow light in to the clover seedlings. Section 3.6 describes this in detail.
- Stresses caused by weather can have a large effect on the maintenance of the grass–clover balance. Prolonged dry spells can reduce clover populations substantially.
- Provide adequate nutrition for both legumes and grasses. Apply fertilisers throughout the year so that sufficient nutrients are available for periods of rapid growth. Rectify all existing nutrient deficiencies. Reduce severe soil acidity with lime.