The Derwent Catchment Project
Increasing Productivity. Restoring Landscapes

Derwent Pasture Network

Grazing Bites Series: Why clover?

Clover is an important part of everyday pastures. Unfortunately, the everyday experience is often that there is simply not enough of it present to make a real difference.

While grass will produce the bulk of paddock feed, clover can help fuel that growth and make it even more valuable in terms of the energy supplied to livestock.

Clovers, like other legumes, can fix nitrogen from the air using their association with rhizobial (nitrogen-fixing) bacteria present in nodules on their roots. This nitrogen is valuable. It is an essential element for the growth of all pasture feed, and for the animals that graze it.

By itself, grass does not have this capability and must rely on companions such as the caring manager who purchases nitrogen fertiliser, or the clever clover that partners with the rhizobia. Either way, without a nitrogen supply there is very likely to be significant pasture growth constraint.

From a system viewpoint, clover content represents a double opportunity, to both add nitrogen that fuels total pasture growth and also to increase feed quality and protein content to drive animal production.

How much do we want?

A commonly regarded target is 30% in the growing season. When considering how much is required, we must bear in mind that while a few clover leaves can catch the eye, tons of clover mass makes the difference. And because clover leaves are flat and showy it's easy to think there is more than there is in reality.

Take a look, or take a pasture cut, and check out the proportion of clover to grass leaves present in the height of spring growth. The type of clover can be important, determining how long and how well it can grow. Perennials like white clover and red clover are great because they can hold their ground and keep their presence in the pasture. If they persist.

In practice, however, the species best adapted to the environment is what matters most. In low-rainfall environments this may be an annual species like sub clover. Being an annual it may not have the long season growth we desire, but it can survive as seed to be present and grow as new plants in a new season.

Is it hard to manage?

The composition of clover in pasture is by its very nature changeable or dynamic. When there is little nitrogen in the soil, clover will have an advantage over grass. The success of clover in fixing nitrogen, however, will subsequently help the grass become more competitive. This and even the way grasses grow, with their more upright habit, means that management is needed to keep enough clover present.

Clovers are also more sensitive to poor soil nutrient supply than grasses. They need nutrient to thrive and in turn supply the nitrogen they help fix. They also need trace amounts of molybdenum for the mechanics of nitrogen fixation to occur. Where this is not naturally sufficient in soil, it needs to be supplied.

Competition from grasses also needs to be managed. This may particularly be the case in spring. Controlling the canopy of grass and allowing light to get to clover leaves that are not swamped by grass will help increase or maintain clover contribution. Controlled grazing pressure can be used as a tactic, focusing on selected pastures to maintain or improve their clover content.

Where annual clovers are concerned, flowering and seed set are essential. Over grazing during these times will be detrimental. Equally, managing to ensure some bare ground at the autumn break is important to help annual clovers germinate and establish.

Is it achievable?

While none of this may seem achievable in every paddock, every year, it can be broadly achievable where clover composition is monitored, and priorities are established to meet selected needs and targets.

Clovers turn grass into a pasture, building a bank of organic nitrogen, increasing pasture resilience, and leveraging value across the production system. Management and care are key to clover success. This includes managing threats such as those posed by uncontrolled selective grazing and the potential for collateral damage from herbicide sprays.

In summary

Why clover?

- It is not a luxury! Clover is part of a functioning pasture.
- It provides a biological nitrogen supply and leverages other fertiliser inputs
- It adds feed quality and protein to fuel high demanding animal production

What target and what clover?

- 30% of the growing season composition is a target
- Perennial legumes may be preferable, but best adapted is required
- Annuals like sub clover are well adapted to low-rainfall environments

Is it hard to manage?

- Clover composition is dynamic, changing from year to year and across the season
- Management tactics and setting priorities is required
- Grasses are generally more competitive
- Managed grazing can control grass canopies and give the clover light and space
- Annual clovers require trash-free bare ground to germinate in autumn
- They also need to flower to maintain the soil seed bank
- Use herbicides carefully, avoiding clover when its vulnerable, or creating stress when it's unnecessarily

For more information on clover or to provide feedback about your experience utilising clover please contact Peter Ball from the Derwent Catchment Project at peter@derwentcatchment.org

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