

The Ideal Pasture

An ideal pasture is a mix of perennial grass (60%) and clover/medic (40%). Perennial grasses can be native or introduced species. Grasses can be further subdivided into whether they are summer active (C4) or winter active (C3). [See Table 1 for some examples of the most common perennial grasses].

Perennial grasses are the most important part of the mix because they:

- > **Extend the growing season of the pasture.** This is very important in terms of pasture grown
- > **Remove more water from the soil profile.** This is very important in terms of deep drainage and environmental issues

Managing Perennial Grasses

Each perennial grass has its own special requirements to thrive, but in general terms they:

- > **Need time to recover after grazing.** Both the roots and the growing shoots are damaged by grazing and take four to five weeks to recover
- > **Need to set seed.** Heavy grazing at the time of seed set will reduce the amount of seed available to recruit new plants

Some perennial grasses require fertile soil; others (mostly native species) do better in lower fertility environments [See Table 1]. Summer grazing should be tailored to the particular grass. For example, perennial ryegrass should not be grazed too short, phalaris should be grazed to remove the old leaves, but not so hard as to damage the dormant buds underground. For the cool season (C3) species, heavy spring grazing before flowering maximises tillering and reduces shading of clover. It also maintains a better feed quality.

Why Weeds? Why Me?

Weeds emerge in pasture for three main reasons; selective grazing by stock, fertility levels of soil and changes to the environment:

1. Animals naturally prefer certain pasture/plants to others. Given the choice, they will selectively eat the one they prefer. The more choice you give your stock, the more selectively they will graze and the more the other plants in the pasture (usually the weeds) dominate. Conversely, the less choice you give the stock, the more evenly they will graze.
2. The soil type or level of fertility suits one plant species over another.
3. If you remove a weed from your paddocks, but don't change the way you manage your pasture, the weed will almost certainly return after a couple of years.

Managing Annual Grass Weeds

*Annual grasses rely on seed production each year to set up the next season (except *Vulpia* - silver grass). This reliance gives us a weak point to strike at. Pointers for minimising annual grass weeds include:*

- > Defer grazing in winter to reduce tillering of the annual grasses
- > In spring, graze very hard for a short time as the annual grasses are in the process of sending up the seed head. Once the seed head stem is gone, the plant will not send up another (Other younger plants may be missed in this process)
- > Barley grass (*Hordeum*) is an excellent early season feed, only the seed head is a problem, so utilise the good aspects of it in the short-term
- > Grazing once the seed head has formed is unlikely to do much to reduce the seed set of annual grasses



Photo courtesy Ian Benson

Managing Broad Leaf Weeds

Broad leaf weeds such as capeweed, geranium (*Erodium*) and Salvation Jane are best controlled with on-off grazing. This is a little more specific than rotational grazing and involves putting stock into a paddock when the feed gets to a certain height and removing them when it is eaten down to a minimum height.

Hay vs. Silage

Making silage provides excellent weed control by removing the seed heads before they fall from the plant. The fermenting process in silage kills seed head in the feed. Hay tends not to offer such an effective control as it is cut later than silage and there is no 'pickling' process.

Cultivation and Weed Control

Another form of chemical free weed control is cultivation. Timing of cultivation is critical to controlling weeds. Further, cultivation can stimulate other weeds to germinate and also leaves soil susceptible to erosion. Badly managed, it can leave you worse off than before!

Grazing Management

There are many ways to graze pastures. At one end of the spectrum there is 'set stocking' where stock are left in the one paddock for many months or even permanently. At the other end there is 'cell grazing' where stock are run in big mobs and shifted every day. **In general it is better to have stock grazing in big mobs for short periods.**

Rotational Grazing

In summer aim to give paddocks one to two weeks grazing followed by nine to ten weeks rest. In the cold part of the green season, grazing for five to seven days followed by four to five weeks rest is ideal.

The simplest rotational grazing system requires four paddocks. Six paddocks are better, eight better still. In the spring, when there is rapid growth rapidly, there is never enough stock to control the pasture. This will either mean shutting some paddocks up for hay or silage, or getting other stock in.

Achieving High Grazing Pressure

Ways to achieve high grazing pressure include:

- > Boxing all the ewes or cows in one group, rather than having several mobs
- > Running different species together
- > Closely monitoring the fat score of stock to ensure that they are not being pushed too hard, or vice versa
- > Letting mobs follow each other, for example, having the cows go first and the ewes following

Pasture Density

Maintaining pasture density is a vital part of minimising weeds. Bare ground is an ideal place for weeds to 'pop up' and grow without competition. Your grazing management/stocking rate should aim to maximise plant density.

Aim for ground cover of over 70% - and preferably over 85%. This is even more important on hilly land.

When to Re-sow a Pasture

Some pastures have degraded so much that there are too few desirable plants left. This point is difficult to define as it depends on many factors, but get an independent assessment - not from someone selling seed! while re-sowing is an option, one should not re-sow unless everything else that can be done has been done - for a few years. There is no point trying to re-sow a new pasture into a bed of weeds. Other things to consider include:

- > That re-sowing pasture is very expensive.
- > Re-sowing a pasture successfully is difficult unless you initially remove the weed and insect competition
- > One should not re-sow too much in one year
- > One should not re-sow pasture unless currently using all the feed grown

Priorities

Often there is not enough stock to provide the grazing pressure required to control a particular weed, or the timing required for one weed is different to that for another. Therefore, priorities have to be set - aim to control the most damaging weed first.

Pasture management and weed control are not short-term issues; they are on-going matters. Doing the right thing for one to two years will make relatively little difference in the long term. A long-term solution requires a longer-term commitment to pasture management.

Table 1 Common Perennial Grasses

Species	Native/ Introduced	Winter/ summer active	Response to increased soil fertility
Wallaby grasses (<i>Austrodanthonia</i> species)	Native	Winter	Increase - amount depends upon species
Kangaroo grass (<i>Themeda triandra</i>)	Native	Summer	Decrease
Windmill grass (<i>Chloris truncata</i>)	Native	Summer	Increase
Spear grass (<i>Austrostipa</i> species)	Native		Decrease
Brushwire grass (<i>Aristida behriana</i>)	Native	Summer	Decrease
Weeping rice grass (<i>Microlaena stipoides</i>)	Native	Winter	Increase
Perennial ryegrass (<i>Lolium perenne</i>)	Introduced <i>Europe & Asia</i>	Winter	Increase
Phalaris (<i>Phalaris aquatica</i>)	Introduced <i>Mediterranean</i>	Winter	Increase
Cocksfoot (<i>Dactylis glomerata</i>)	Introduced <i>Europe</i>	Winter	Increase
Veldt grass (<i>Ehrharta</i> species)	Introduced <i>South Africa</i>	Summer	Increase
Kikuyu (<i>Pennisetum clandestinum</i>)	Introduced <i>South Africa</i>	Summer	Increase
Fescue (<i>Festuca</i> species)	Introduced <i>Europe & Asia</i>	Winter	Increase
Paspalum (<i>Paspalum</i>)	Introduced <i>South America</i>	Summer	Increase

If the information here whets your appetite for more, an Introduction to Organic Farming - Horticulture and Pasture will be run between February and March next year. For further information contact Simon Welch, Land Management Program, on (08) 8536 3388 or 0418 8100 086 or refer to our Out and About section.

Table 2 Advantages and Disadvantages of Rotational Grazing

Benefits	Disadvantages
1. Less selective grazing fewer weeds	1. More fencing
2. Better growth and recovery of plants (especially perennial grasses)	2. More & (often) bigger water points
3. Better pasture density by less over-grazing of certain areas	3. More local over-grazing
4. Better production per hectare	4. More labour
5. Fewer mobs to monitor	5. Must be a better manager (less room for error)
6. Fewer internal parasite problems	6. Poorer performance per head because of poorer feed quality
7. Less land damage	7. More tracking