



Feed Planning

Ryegrass grazing management in the autumn

Over summer in south-eastern Australia, with limited rainfall on rain-fed areas of the farm, leaf emergence rates slow, pasture growth rates decline and there is increased grazing pressure on any irrigated areas of the farm. As a result, the average pasture cover of the farm tends to decrease.

The autumn break occurs when there is a significant rainfall event with follow-up rain that lead into winter. Sometimes there are 'false' autumn breaks when there is a significant rainfall event but no follow-up rain in the following weeks.

In a 'false' autumn break, pasture will become green but there is little growth and once soil moisture becomes limiting again, this growth will stop.

Once the true autumn break does occur, it provides the opportunity to build pasture covers across the grazing platform prior to cooler conditions and slower pasture growth during winter.

To get the greatest benefit from the autumn break consider:

- › Grazing management
- › Nitrogen use
- › Pasture renovation

Grazing management

There are three principles to follow to maximise pasture consumption and ensure good pasture quality.

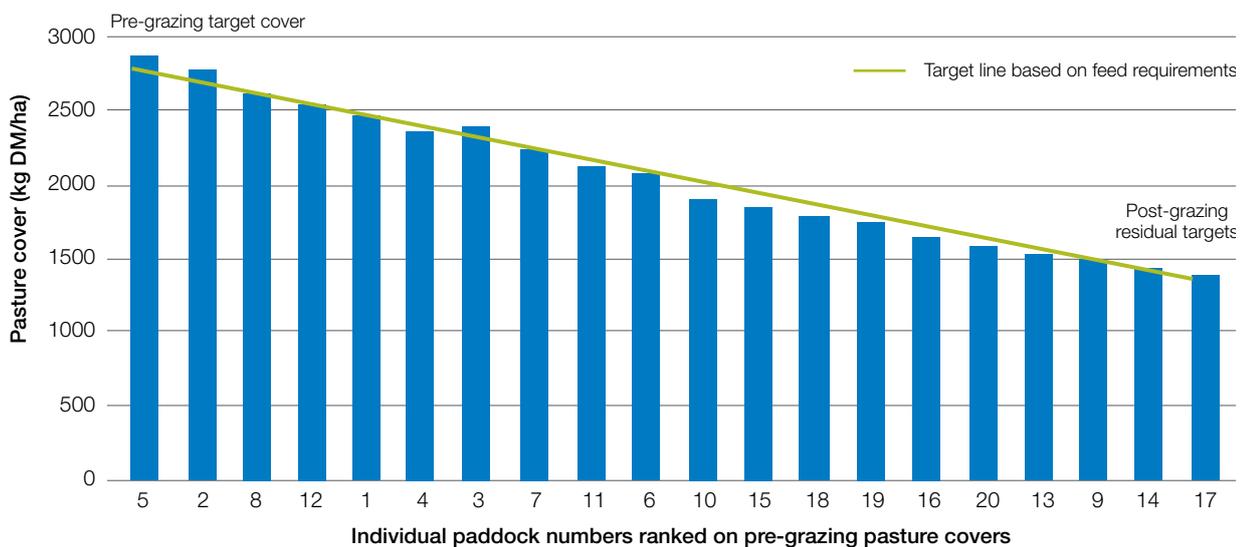
1 Set grazing rotation based on leaf stage

For ryegrass-based pastures, this means grazing at the 2.5 to 3 leaf stage or before canopy closure to maximise the amount of pasture grown. The difficulty of achieving

Key messages

- Excel at grazing management
 - › Graze ryegrass pastures at 2.5–3 leaves or before canopy closure
 - › Determine round length based on leaf emergence rate
 - › Aim for a pasture residual height of 4–6 cm between the clumps
- Consider use of nitrogen when soil moisture allows
- Consider pasture renovation for underperforming paddocks

Figure 1 Building a feed wedge



this will depend on how the farm was managed during the dry period. If a leaf-stage based rotation was maintained on the rain-fed area of the farm despite there being only a small amount of growth, this should be continued. If a fast grazing rotation was used or rain-fed paddocks were not grazed during the dry period there will be a bulk of paddocks at a similar leaf stage. In both circumstances, there will need to be some compromise to establish the right rotation and achieve an orderly feed wedge (Figure 1).

If there is a bulk of paddocks close to 3-leaf stage, the grazing of these should still be spaced to establish the feed wedge. Some may be past the 3-leaf stage by the time they are grazed which means some wasted pasture but if they are all grazed quickly after the autumn break there will continue to be a bulk of paddocks all at the same leaf stage. Similarly, if there are many paddocks all at a low leaf stage, some may need to be grazed before they reach 2.5–3 leaves to achieve the target feed wedge and rotation length.

To determine the grazing rotation, you need to know (or be able to estimate) the leaf emergence rate. Leaf emergence rate depends on temperature and moisture. After the autumn break, moisture should not be limiting so leaf emergence rate will mainly be driven by temperature. The warmer it is, the faster the leaf emergence rate. As a guide, leaf emergence rate will typically be 10–15 days per leaf in early autumn (if moisture is not limiting).

To graze at the 2-leaf stage it means you would need to be on a 20–30 day rotation. To graze at the 3-leaf stage you would need to be on a 30–45 day rotation. Because it is autumn, soil temperature will be decreasing so you would typically aim for the longer rotation to build pasture cover.

Determine the area offered per day using the following, e.g. if the leaf emergence rate is 13 days per leaf, to graze at the 3-leaf stage a 39 day rotation is required (13 days x 3 = 39 days). If the grazing platform is 100 hectares, an average of 2.6 hectares should be offered per day (100 ÷ 39 = 2.6 ha).

If there is not enough pasture in this area to feed the cows, demand needs to be decreased (e.g. dry-off or cull cows) or supply needs to be increased (e.g. supplement or nitrogen). Don't increase the area grazed to meet cow requirements as this leads to lower pasture production and increased need for supplement during winter.

Continue to monitor leaf emergence rate and slow the rotation to match. Leaf emergence rates over winter are typically 13–25 days per leaf (the colder the temperature the slower the leaf emergence rate).

2 Grazing duration

In slowing down the rotation, it is important to ensure an area isn't grazed for longer than 2–3 days. If cows are grazing the one paddock for more than 3 days, they will start to eat the pasture regrowth which will slow growth rates and reduce pasture yield. Use back fencing to avoid this.

Ensure if young stock or dry cows are following the milkers the grazing is completed within 3 days.

3 Ensure grazing residual targets are reached

Aim for a post-grazing residual height of 4–6 cm between the clumps, equivalent to 1400–1600kg DM/ha to maintain quality.

Nitrogen use

Nitrogen fertiliser is generally a cost-effective tool for increasing pasture growth and could be considered when extra feed is needed. Nitrogen is only effective on boosting the growth of pasture that is growing – it shouldn't be applied to dormant pasture and where soil moisture is limiting.

Nitrogen can be applied as soon as there is a significant rainfall event (>25 mm) and continue until soil temperature becomes too low. Temperate pasture (e.g. ryegrass) will generally respond to nitrogen when soil temperature is above 4°C. Sub-tropical pasture (e.g. kikuyu) will respond to nitrogen when soil temperature is above 10°C.

After a dry summer or drought, there is a large pool of nitrogen already in the soil. Despite this, responses to nitrogen still occur, especially if there has been heavy rainfall which has washed some of the nitrogen in the soil below the root zone. Apply nitrogen at a rate of 20–50 kg/ha. For more information about using nitrogen effectively in autumn see the Nitrogen in autumn fact sheet.

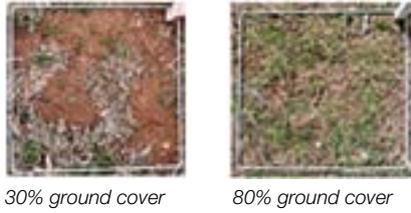
Pasture renovation

Long, dry periods can cause perennial pasture plants to die resulting in a less dense pasture with lower productivity. Ideally, a pasture will contain at least nine (desirable) plants in a 30cm². As a rule of thumb, if 30–50% of the area being assessed is not adequately covered by desired pasture plants then consider renovation. If the autumn break occurs early enough, it is an ideal time to renovate pasture.

If the autumn break occurs late, it may be better to use a short-term crop to grow feed for winter (see Winter cereals or annual ryegrass – sowing options for autumn fact sheet) and undertake the pasture renovation in spring. Renovation of pastures on a portion of the milking area each year also allows you to capitalise on genetic improvements in ryegrass varieties.

See the fact sheet on Dairy Australia's Forage Value Index for more information on how new ryegrass varieties are being tested and perform.

Figure 2 Ground cover



Planning ahead

When the autumn break occurs and how it is managed will have a big impact on feed availability over winter. It is important in autumn to prepare or update feed budgets to ensure there is going to be enough feed on hand to get through winter with the cows in appropriate condition. Information for creating a simple feed budget is in the *Back of the envelope feed budget* fact sheet.

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