



# farmtalk



This article contains information most relevant to the less than 350 mm rainfall mallee farming region

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# Grazing For Cereal Production

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## The issues

A period of low feed availability or a 'feed gap' often exists in late autumn or early winter after the break of the season. This can result in the need for expensive hand feeding or reduced livestock productivity in the absence of supplementation. Grazing cereals early in the season which are intended for grain production is an ideal method of filling this feed gap.

Grain & Graze work done previously in the high rainfall areas of southern Australia has shown there will only be small reductions in yield from grazing before growth stage/score (GS) 31. However, circumstances are very different in the Mallee.

Compared to pastures, cropping can be a high input, high return system, and hence associated with high risk. Grazing these crops in the Mallee has potential to add to this risk.

## What we know

Mallee Grain & Graze demonstrations have shown that cereals can be grazed and still produce good grain yields.

In addition to filling the feed gap, grazing cereals allows deferred grazing of pasture paddocks. This enables pasture paddocks to optimise leaf area and subsequent dry matter growth rates before grazing. Grazing cereals intended for grain production can reduce the amount of regenerating pasture required, which could allow larger areas to be cropped.

Grazing cereals delays flowering by 7-10 days, which can be a frost risk management tool. However, delaying flowering also pushes grain fill into warmer, drier conditions which is detrimental to grain fill.

Grazing can provide a form of canopy management by reducing biomass. This reduces transpiration, resulting in a potential increase in water use efficiency.

## When to start grazing

Grazing cereals can commence once the plants are properly anchored which will prevent stock pulling out plants. The 'pinch and twist test' is a good grazing simulation. This involves pinching and twisting leaves while pulling. Secondary roots are also a good indication of well-anchored plants. Grazing can start early at the 3 leaf stage (GS 13/21) as long as stocking density is matched to cereal growth rate or stock are moved regularly to prevent overgrazing. One early grazing at the 3-5 leaf stage is less likely to reduce grain yields, even with wheat, compared to either continuous grazing or later grazing to growth stage 30.

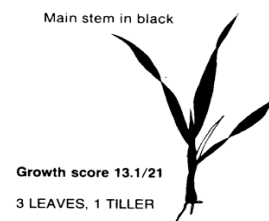


Figure 1 – GS 13/21

## When to stop grazing

Grazing in the Mallee needs to be stopped earlier than in higher rainfall zones. Figure 3 (over page) shows that terminating grazing in early tillering results in minimal yield loss while loss increases exponentially after mid tillering. This occurred in 2008 with growing season rainfall of 140mm, a decile 3 year. Similar trends could be seen in other cereal crops in 2008 and 2007.

To reduce the risk, grazing should be terminated as soon as possible. For example, once medic pastures are



### Mid Tillering Defined

The middle of tillering is dependent on the number of tillers a crop will produce prior to stem elongation. This is dependent on species, variety and sowing time. Early sown crops will produce more tillers before stem elongation than late sown. Late maturing varieties remain in the vegetative phase for a longer period of time and hence produce more tillers. If in a given season at a specific sowing date a crop will produce 6 tillers in addition to the main stem (reach GS26) before stem elongation, then mid tillering will be GS 23. This can be identified by 3 tillers in addition to the main stem. For a crop that only produces 4 tillers before stem elongation mid tillering will be GS22 or 2 tillers in addition to the main stem. Tillering will start at 3-4 weeks after crop emergence, with a new tiller emerging every 7-10 days. Hence mid tillering for a plant that produces a total of 4 tillers in addition to the main stem before stem elongation will be 6-7 weeks after crop emergence.

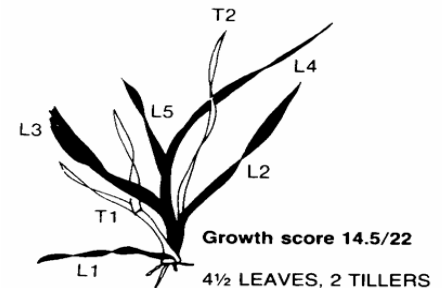


Figure 2 – GS 14.5/22

sufficiently established, cereals should be rested for grain production. While this may reduce the total feed obtained from the cereals it will still provide feed at this crucial time early in the season.

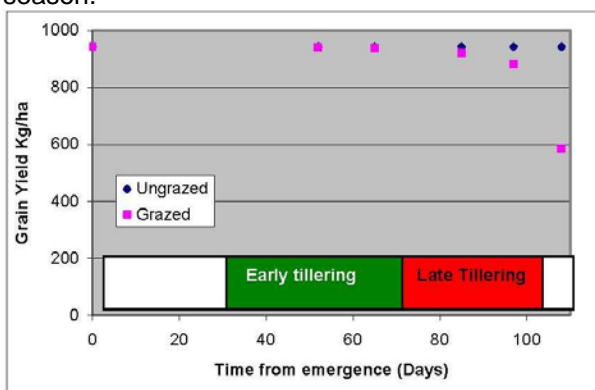


Figure 3 – The effect of grazing on Yitpi wheat yields

Cereals can get to mid tillering very quickly. Hence regular growth stage monitoring is essential if grazing crops are sown for grain. Determining the stage of crop development can be made easier by excluding stock from a section of the paddock with a cage.

### What to grow and how

Barley, wheat, oats, triticale and cereal rye can be successfully grazed for grain production. Barley produces more early bulk than triticale, which produces more than wheat, but feed quality is the reverse, with wheat having the highest digestibility, triticale slightly lower and barley in the middle. Early dry matter production is important as this fills the feed gap. Quality and quantity are not major concerns as all cereal crops are sufficient. What to plant for grain and grazing is determined by the

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best rotation for the paddock and hence the disease and weed burden. Early or dry sowing, while limited to paddocks with low weed burden, is ideal as this allows early production of feed and minimizes impact on grain production.

### Effect of season

If feed supply is short, grazing to late tillering may be economic. This is because the resultant yield loss may be minimal relative to improved livestock returns. In areas with high water storage potential, stored soil moisture can be used to assist in predicting the likely available moisture for grain fill and hence the risk associated with grazing during late tillering.

### What it means

Grazing cereals for grain production in the Mallee needs to be well managed to ensure minimal impact on yield. Ideal practices include early sowing and early grazing terminated before late tillering. A lower risk option may be sowing cereal into pasture paddocks for grazing only with the potential for grain harvest in a good season.

### Where to next

A good start would be an early sown barley crop, grazed early, maintaining close attention to cereal growth stage and grazing.

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### Important

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