



Project Update:

(for more details go to www.farmlink.com.au/gg.htm)

R&D trials

a) grazing wheats

The Marrar & Yerong Creek grazing wheat agronomy trials have again provided valuable growth rate information despite the late break, as well as rules of thumb for estimating wheat dry matter. Unfortunately, patchy emergence meant the Harden trial could not be used for data collection this year. CSIRO's water sensors at Marrar are again showing the impact of grazing on reducing water use - check the daily update at www.ciw.csiro.au/MoistureWeb/GrainGraze/ (or follow the link from the FarmLink G&G website).

The Wallendbeen grazing management and liveweight trials have provided some excellent data this year, particularly relating to the potential for magnesium supplements (see article page 2).

b) short term pastures

The short term pasture trials have generated a lot of interest. These were included in the project to evaluate species that could boost feed production, in conjunction with perennial pastures and grazing wheats. Results to date indicate the majority of species are capable of very high growth rates (Fig 2) in the late spring period, when perennial pastures are beginning to slow down. They can also provide a source of high quality feed to supplement the declining quality of other pastures as they begin to senesce. The 2-year trials will continue next year, with the ryegrass, brassica and wheat being re-sown.

Focus Farms

Monthly monitoring (including water use, DM, etc) of the 5 Focus Farms at Coolamon, Tarcutta, Temora, Leeton and Lockhart is available in 'Focus Farm Facts' - see www.farmlink.com.au/gg.htm

G&G Seminar Series

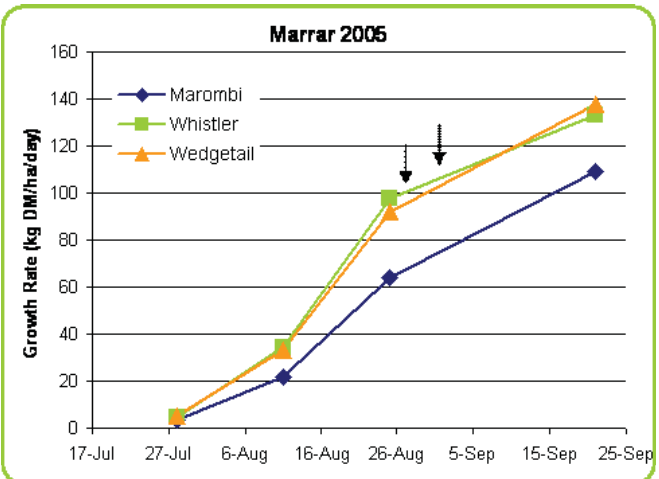
Unfortunately, the Fodder Conservation Seminars planned for September had to be postponed until spring 2006 due to unavailability of presenters. The G&G Seminar Series will re-commence early 2006.

Grazing wheats 2005

Growth rates

Despite the late start to the season, winter wheats have again proven they are capable of high growth rates and good grazing recovery. Favourable spring conditions have resulted in growth rates in excess of 100 kg DM/ha/day during the grazing period at Marrar (Fig 1), and 150 kg DM/ha/day at Yerong Creek. As found last year, Wedgetail & Whistler have provided the best growth rates this season.

Figure 1 - wheat growth rates, Marrar (arrows indicate dates of crash grazing)



Effect of grazing on flowering time

As seen last year, grazing again delayed flowering dates at the trial sites in 2005. A 2-3 day delay in flowering resulted from the short period of crash grazing at Marrar and Yerong Creek, whilst high grazing pressure (~30 DSE/ha) and late lock-up (25th Aug) caused a 16 day delay in flowering at the Wallendbeen trial. (source: Guy McMullen, NSW DPI)

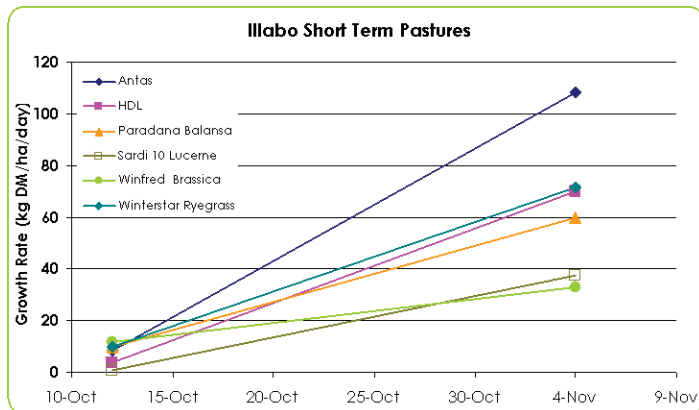
Short term pasture trials 2005

Growth rates

Despite late sowing (29th June), the favourable spring conditions have resulted in excellent dry matter production. Antas subclover in particular has been a highlight, with growth rates of 100 kg DM/ha/day. Winterstar ryegrass, Paradana balansa and the high density legume mix (HDL - Persian, berseem & arrowleaf clovers) are also performing well with growth rates between

60 and 75 kg DM/ha/day. Unfortunately Winfred brassica has been disappointing in this trial due to a lack of early nitrogen - commercial paddocks show this to have great dry matter potential.

Figure 2 - short term pasture growth rates, Illabo



Feed quality

The latest feed quality results taken on the 4th November (Table 1) show the potential for these short term pastures to provide high quality feed in late spring, when other pastures are starting to decline (also note comparison with the grazing wheat).

Table 1 - short term pasture feed quality (4th November)

Species	Digestibility % (NIR)	Metabolisable energy (MJ/kg)	Crude protein %
Antas sub	71.0	10.6	20.8
Balansa clover	66.2	9.8	20.1
HDL	62.5	9.1	20.8
Winterstar ryegrass	71.9	10.7	10.2
Sardi 10 lucerne	64.4	9.5	16.7
Winfred brassica	80.1	12.2	15.8
Wedgetail wheat	60.7	8.8	8.2

Liveweights on Grazing Wheats

In response to grower feedback on the liveweight trial last year, a magnesium (Mg) supplement was included in the Wallendbeen trial this year with the hope of improving animal performance. Cereal hay was also included with the thought that additional fibre may increase liveweights.



lamb feeding on the supplementary oaten hay

The trial, stocked at 35 crossbred lambs/ha on Wedgetail wheat, consisted of 3 treatments:

1. Wedgetail only (without supplements)
2. Wedgetail + oaten hay
3. Wedgetail + magnesium & calcium*

*the Mg/Ca supplement used was equal parts Causmag (MgO) + stocklime + salt. Calcium was included in case the

wheat was deficient, and salt was used as an attractant.

Results

There were marked difference in liveweight gain in the 3 treatments, as follows:

1. **Wedgetail only: 184 g/hd/day** - 'acceptable', but below potential of ~300g/day
2. **Wedgetail + oaten hay: 225 g/hd/day** - this increase was not significantly better than the Wedgetail only and may be just chance, or a response to the mineral content of the hay.
3. **Wedgetail + Mg/Ca: 283 g/hd/day** - a significant response that is approaching their potential. There is strong evidence that this is a magnesium response with tissue tests showing the wheat to be low in magnesium and high in potassium (K), with adequate calcium (Ca) for animal growth.

Where to next?

While these results give a strong indication of a response to Mg, we still need to address a number of aspects:

1. *Confirm that it is a Mg response.* This will include checking the role of the sodium (Na) in the supplement, since the wheat was low in Na.
2. *Check how widespread low Mg/high K is in grazing wheats.* Wheat crops grown in the acidic topsoils of SE NSW can occasionally be Mg-deficient, with acidity reducing Mg adsorption by the plant. If the wheat is grazed when roots are still in the topsoil, it may not be able to take up enough Mg for the animals. Once the roots reach the less acid subsoil, plants can take up more Mg and the wheat may be less deficient for animals.
3. *Seasonal conditions are also likely to play a role.* If sown early, wheat roots may already be in the subsoil before the crop is grazed, so Mg content may be adequate for animals. However if the crop is sown late and grazed relatively early, the wheat may well be Mg-deficient for animals.

Summary

The 2005 liveweight trial results give a strong indication of the value of providing a magnesium supplement when grazing wheats. At a cost of 1c/sheep/day for a liveweight return of at least 15c/sheep/day, if nothing else it makes Mg supplementation a cheap insurance.

Background

In the US, grazing wheats are often low in Mg and sometimes Ca. Cattle grazing these wheats are commonly provided with a Mg supplement to avoid what we refer to as grass tetany, which may reduce weight gains without showing clinical symptoms.

In Australia, Mg problems and grass tetany would typically be expected in animals (especially beef cattle) grazing grass dominant winter pasture, with low Mg, high K (potassium) and high protein content (both K & protein can reduce the adsorption of Mg from the gut) - a description which fits grazing wheats grown under many conditions in the high rainfall zone.

Source: Hugh Dove, CSIRO