

Fact Sheet...

Project Update:

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

R&D trials 2007

• Peter Martin has recently replaced Guy McMullen as the primary researcher on the Grain & Graze project. Guy has transferred to Tamworth and we thank him for all the time and hard work he put into Grain & Graze.

a) grazing cereal agronomy

• Two grazing cereal **row spacing trials** have been sown at Ganmain (sown 9th May) and Muttama (sown 10th May) to look at the impact of row spacing and plant numbers on dry matter production, grazing compaction and grain recovery. The trials include grazed (**140 & 200 plants/m²**) and ungrazed (140 plants/m²) **Wedgetail** wheat and **Breakwell** triticale, and ungrazed **Ventura**, sown on **18cm and 30cm row spacings** (also 36cm spacings at Muttama).

b) grazing wheat management

• The grazing management trial is being repeated this year on **lambs** (Collingullie) and **cattle** (Ganmain) to determine optimum 'stock on' and 'stock off' times for grazing wheats. Lambs commenced grazing the 'early start' treatment at Collingullie on 25th June at ~300kg DM/ha, with 'later start' lambs to follow shortly. The cattle trial will be stocked this week.

Focus Farms

• Unfortunately Craig Muir has left for the greener pastures of Nowra so no production data has been collected from the Focus Farms since March. A replacement is currently being sought.

• The autumn 2007 **biodiversity sampling** has been completed on each Focus Farm, including measurements of botanical composition, soil fungus and invertebrate numbers. Results indicate generally greater fungal activity in the cropping paddocks. (Sheila Lee, CMA).

G&G Seminar Series

• The 2007 Seminar Series kicked off with a **Fodder Budgeting Workshop** for advisers and livestock agents at Downside on the 18th July.

• The **2007 G&G Farmwalk** will be held at both the sheep & cattle grazing management trial sites on the 3rd August.

• The Murrumbidgee G&G region are hosting the **National Grain & Graze Forum** in/near Wagga on 14th-16th August. All welcome, details to come.

Sheep supplements on grazing wheats

(Source: Hugh Dove, CSIRO)

Many grazing wheat crops are being, or about to be, grazed. Research as part of the Grain & Graze project in 2005 & 2006 has shown liveweight responses when growing sheep on grazing wheats are given magnesium and sodium supplements. This appears to be a response to marginal magnesium levels in wheat forage, which is potentially widespread across low pH soils in south-east NSW, and exacerbated by the forage's low sodium and high potassium content.

In addition to the direct effect of a magnesium supplement (eg. Causmag), a sodium supplement (eg. salt) also appears to be helping by increasing magnesium uptake in the rumen. Magnesium uptake is otherwise restricted on the low sodium and high potassium forage typical of many grazing wheat crops. Both the magnesium and sodium supplements fed to XB lambs in the 2006 trial resulted in liveweight gains of 24% and 37% respectively (compared with nil supplement). A supplement mix of 1:1 Causmag (magnesium source) and salt therefore appears to be worthwhile for growing sheep on grazing wheats, at a supplement cost of ~1¢/hd/day. Although less work has been done on growing cattle in Australia, in the USA this mix is also recommended for growing cattle.

Although most of the wheat crops tested for mineral content contained adequate calcium for growing stock, levels would be more marginal for lactating animals. It is therefore suggested the supplement mix for lactating animals (sheep and cattle) should also include calcium (lime), at a ratio of 1:1:1.

Suggested Supplements for Stock on Grazing Wheats

- **Growing sheep/cattle**: Causmag & salt at ratio of 1:1, eg. (10g Causmag + 10g salt) per head per day.
- **Lactating sheep/cattle**: Causmag, salt & lime at ratio of 1:1:1, eg. (10g Causmag + 10g salt + 10g lime) per head per day.

*note that suggestions for cattle are based on US research.

Fodder Budgets - a quick review

One of the main objectives of the Murrumbidgee Grain & Graze project is to increase the number of growers using fodder budgets. In conjunction with Jim Shovelton (MS&A), we have run six fodder budgeting workshops over the past 2 years. Many growers have attended these workshops, but how many have put fodder budgeting into practice on their own farms??? The following points may be a timely reminder of the 'what and how' of fodder budgeting...

- 1) Determine your **target fat score** or **growth rate** for the class of stock being run.
- 2) Determine the **amount** (kg DM/ha) and **quality** (particularly digestibility in winter) of feed present in the paddock.
- 3) Determine daily **feed requirements** - Jim uses a rule of thumb of **1kg DM/DSE/day** (note: the Prograze method uses more detailed intake figures produced by Grazfeed, accounting for dry matter availability and quality). Table 1 provides typical DSE ratings - multiply the number of stock being run/ha by their DSE rating to give feed requirement (kg DM/day).
- 4) Determine **pasture growth rates** - this is probably the most difficult factor to determine as it will vary depending on seasonal conditions. 'Best estimate' monthly growth rates for a range of pasture species are shown in Table 2. The Grain & Graze project has attempted to fill the gap in grazing wheat growth rate data but very late breaks have limited results.

Table 1 - DSE ratings (source: 'Triple P')

Sheep	body weight		
	40kg	50kg	60kg
dry sheep:	0.9	1.1	1.2
pregnant ewes last month - single:	1.2	1.4	1.6
- twins:	1.4	1.6	1.9
lactating ewes - single:	2.6	2.7	2.9
- twins:	3.7	3.9	4.4
average ewe with single lamb:	1.4	1.7	1.8
weaners (30kg) - maintenance:		0.7	
- gaining 50g/day:		1.3	
- gaining 100g/day:		1.7	
Cattle	body weight		
	200kg	300kg	400kg
steers - maintenance:	5	6.5	8
- gaining 0.25kg/day:	6	7	9
- gaining 0.75kg/day:	7	9.5	12
- gaining 1.3kg/day:	10	12	14
- gaining 1.5kg/day:	12	14	17
cows	400kg	500kg	600kg
pregnant last 3 months:	8	9	11
lactating - 2 to 3 months:	13	15	17
- 6 to 7 months:	16	18	20
- 9 months:	19	22	23
average cow:	15	17	19

Table 2 - Pasture growth rate estimates (kg DM/ha) for south-west slopes* (source: Prograze)

Month	phalaris /sub	lucerne /sub	annual grass /sub	native grass (no fertiliser)	grazing wheat*
Jan	5	12	3	8	
Feb	7	10	4	6	
Mar	16	17	10	5	
Apr	25	28	23	11	
May	24	26	24	10	
Jun	17	14	14	4	
Jul	16	11	10	3	20
Aug	26	25	25	3	115
Sep	47	49	45	7	130
Oct	64	69	64	15	200
Nov	43	54	35	23	70
Dec	12	21	7	13	

*note that growth rates can vary widely depending on the season.

*wheat growth rate data from Grain & Graze trial at Yerong Creek, 2004, sown 2nd May.

As a general observation, grazing wheat growth rates tend to be steady through June/July due to cold temperatures and short daylength, then start to 'explode' in August (see example from Yerong Creek, 2004, in Table 2). It is this 'explosion' in growth rates that needs to be carefully budgeted for to avoid excessive growth and wastage at the end of the grazing period.

Fodder budget example:

You have a 40ha pasture paddock with 800kg DM/ha currently available. What stocking rate is appropriate for lactating ewes (singles) over the next month, with the aim of leaving 500kg DM/ha at the end of the period? (assume pasture growth only at 10kg DM/ha/day due to very cold conditions).

a) the feed....

- feed available: 800kg DM/ha (A)
- desired residual: 500kg DM/ha (B)
- pasture growth: 10kg DM/ha x 30 days = 300kg DM/ha (C)
- total available feed: (A+B+C) = 600kg DM/ha (D)

b) the stock....

- lactating ewe: 2.7 DSE (table 1)
- ewe intake*: 2.7 kg DM/ha x 30 days = 81kg DM/ha (E)

c) the result....

- stocking rate: (D ÷ E) = 7.4 ewes/ha
- total no. stock: 7.4 x 40ha = 296 ewes

*assuming intake at 1kg DM/DSE/day