

Better Grazing Systems

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Summary

Better grazing systems can be developed for the low rainfall zones of the Wimmera and Mallee. With high livestock prices holding there is a resurgence of interest in how to improve our livestock production systems.

Demonstrations at the BCG trial sites showed that new grass pasture species can survive and even thrive in our environment.

Better livestock nutrition was a focus at the BCG Main Field Day and is an integral component of any livestock production system.

The BCG will develop more comprehensive grazing trials in 2006 utilising a mix of new pastures and grazing systems.

Background

The aim of better grazing systems in the low rainfall wheat/sheep zone should be to increase pasture returns without negative effects on the cropping phase.

The focus should be on grazing systems that:

- grow more feed, particularly out of season - eg. winter
- provide higher quality feed, especially late spring and summer
- increase stocking rate by changing the feed production curve
- increase utilisation and feed conversion efficiency into livestock products
- address grazing management and nutrition issues such as red-gut, acidosis etc.
- increase the yield potential of the subsequent cropping phase through more N and organic C cycling through the system

The current focus in the low rainfall wheat/sheep zone is on pasture production with pure lucerne or clover/medic pastures, where grasses are seen as weeds to be sprayed out rather than the main driver of winter pasture growth.

In recent years many livestock producers in the higher rainfall zones have been using High Performance Pastures to produce 75-125kg live-weight gain in lambs and cattle per with the ability to enable animals to gain weight throughout the feed year. This has been achieved by adopting new grazing systems which use lucerne/annual legumes in combination with annual Italian ryegrasses such as Winter Star, and new winter active and summer dormant tall fescues such as Resolute. The combination of grasses and legume pastures makes for a better balanced pasture which reduces red-gut in lambs and bloat in cattle and increases feed utilisation. This is achieved by increasing stocking rates through higher winter feed, and providing a better nutritional balance of metabolisable energy, protein and fibre.

The aim of the demonstration set up at the BCG trial sites in 2005 was to see how well a range of new grasses and clovers/medics could perform in the southern Mallee and Wimmera. Can we

improve our grazing systems so that the target of 75kg live-weight gain per ha is not just a pipe dream but can become a reality? Close attention to sheep nutrition is a key to this system – only if we understand the requirements of our sheep during their different phases of growth can we make the system work better and more profitable.

New Pastures

A range of new grass and legume pastures were sown as demonstrations at the trial sites (Sea Lake, Birchip and Marnoo) in 2005. The pastures of primary interest were grasses – the key questions were “will any of these new grasses grow in our environment? And will they set viable seed?”

The grass species sown were:

- Fescue: Quantum MaxP and Resolute MaxP
- Perennial Ryegrass: Banquet, Fitzroy and Extreme
- Annual Italian Ryegrass: Winter Star and Sungrazer

In addition, a number of medics were also sown with the most notable being Angel – a new strand medic with SU herbicide tolerance. Angel performed very well even when sown into soil which had residual chlorsulfuron (Glean). (See the PlantTech web site for more information - www.planttech.com.au).

The grass species which stood out were the Italian Ryes: Winter Star and Sungrazer. It was surprising how well they produced in this last season. Their growth was prolific over winter and spring. Dry matter cuts were not taken because the demonstration was primarily an investigation to see which of the grasses would grow in our environment.

For the Birchip site, the Italian Ryegrass Winter Star and Medic were subject to a feed test in September (Table 1). Oats (Targa) which were grown in a trial next to the pasture demonstration were included as a comparison.

Table 1: Feed analysis for Italian Ryegrass Sungrazer, Medic and Oats at the Birchip site

	Protein %	Neutral Detergent Fibre %	Digestibility %	Metabolisable Energy
Winter Star	15.4	31.9	83.7	14
Medic	25.3	27.4	74.3	12.1
Oats	13.5	34.3	80	13.2

- Neutral Detergent Fibre is plant cell wall material that livestock cannot digest – the lower the value the more sheep can eat.
- Digestibility is the ability by livestock to digest the plant material consumed.
- Metabolisable energy (MJ/kg DM) is the feed energy which can be used by the animal.

The Winter Star Ryegrass in combination with Medic provide a very high quality feed. Oats, actively growing and at the stem elongation phase, is adequate for a maintenance diet but would need a medic or clover to increase the protein level for lambing ewes.

One concern raised by farmers was: “what is the implication of introducing another ryegrass into our system when we already have so many problems with herbicide resistance in Wimmera ryegrass?” It is a valid concern and ryegrass seed heads from the Birchip site were sent off for viability and herbicide resistance testing – these results will not be available until April, 2006. However, it is thought that these ryegrass species require a longer growing season and therefore may not set viable seed.

The next step in developing better grazing systems is to include some of these grasses in legume pastures and investigate grazing systems such as:

- (i) Short pasture phase (one year before cropping again) where Winter Star is sown in combination with medics or sub-clovers (depending on soil type and suitability).
- (ii) Long pasture phase (three or more years in pasture), where lucerne (activity depending on length of pasture phase) is under-sown in the last cereal, and Winter Star is direct drilled into the new lucerne stand the following year.
- (iii) Long pasture phase, where grazing tolerant lucerne (activity 6) is sown in combination with winter active tall fescue, either under-sown in the last cereal or sown the year following cropping.

Better Sheep Nutrition

Better pastures on their own will not result in better grazing systems without paying more attention to livestock nutritional requirements. To increase profitability of our livestock systems more sheep have to be turned off per hectare. The key to a more profitable livestock system is to have a much better understanding of how to grow better pastures and knowing the feed quality requirements of your sheep.

The optimum nutritional requirements for livestock are:

Weaned lambs:	16% protein + 11% ME (Metabolisable Energy)
Lambing ewes:	15% protein + 11% ME – for milk production
Hoggets:	14% protein + 10.5% ME
Ewe maintenance diet:	10% protein + 8.5% ME

Key points to improve nutrition and turn out more sheep:

- Know the optimum nutritional requirements for your stock.
- Know the quality of your pastures (analyse your feed) and supplement feed as required.
- Prepare rams before joining (increase the overall conception rate) by feeding a high protein supplement (such as lupins) for 8 weeks before joining and have rams in condition score 4 by joining time.
- Increase ewe fertility before joining (high protein diet such as lupins) for 7 days prior to joining.
- Maintain ewes in condition score 3.
- Do not run maiden ewes which are still growing in the same mob as the mature ewes – their requirements are different and should be managed as such.
- Target and strive for a lambing rate of 150%.

The formula for success is:

1. test pastures and supplementary feed (grain, hay etc) for protein and energy.
2. prepare for the feed gap.
3. feed enough per head per day.

New Pasture and Grazing Project

The BCG will be commencing a new project in 2006 with National Landcare Program support. The main aims of the new project are:

- Utilise grazing systems to increase profitability.
- Address the Natural Resource Management issues of:
 - closing the feed gap over late summer and early autumn.
 - use land more efficiently.
 - reduce the amount of bare soil subject to erosion.
 - reduce ground water recharge.
- Develop and validate new grazing systems for the Mallee and Wimmera through on-farm trials and demonstrations. These trials and demonstrations will include investigating new pasture systems (both natives and introduced species).

We will provide Members with more detail of this new project and outcomes of the on-farm trials and demonstrations in 2006.

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