

## Pasture under adverse conditions - Too expensive?

### Economic returns from pasture development

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*"The Maze"*

*On behalf of the Gulargambone Comparative Analysis Group*

Our farming business is based at "Willaroo" and "The Maze" located in the Gulargambone district on the western side of the Castlereagh river. "The Maze" has been owned by my family since 1944. It is about 66% black soil, some very hard setting and 33% sandy loam. Some of the sandy loam country has been cropped since the 1930's. Willaroo was purchased by my brothers and I in 1968. About 1000 ha is undeveloped, with 50% good sandy loam soil and 50% soft black soil.

The enterprise runs a self-replacing Merino flock of approximately 3,000 ewes as well as 2,000 wethers and have been a contributing member to the GRASS merino group breeding scheme since the early 1970s. The 1994 drought and high wether weaner prices has altered the mix of stock.

#### Why worry about pasture production

- First, the performance of an animal is directly affected by the quality of the pasture, and the genetically superior sheep that we breed will not realise their potential unless adequate nutrition is supplied.
- Second, a lot of our farming/grazing systems have been found to degrade pastures. Degradation occurs through:-
  - ⇒ The plough and poor farming (cropping) systems.
  - ⇒ Chemicals.
  - ⇒ Grazing system.
  - ⇒ Grazing pressure.

Pastures play a key role not only for our livestock enterprise but also for our cropping enterprise, by fixing valuable nitrogen, breaking disease cycles and rejuvenating degraded soil structure.

#### Pastures in our farming system

Our present farming/grazing enterprise evolves around a wheat/lucerne rotation. The present cropping regime is to commence fallows from a three year lucerne phase using chemicals in August.

We then cultivate in November to February, when conditions are right. The fallow is then sprayed as needed till sowing.

Following the first crop the stubble is left standing till August the following year, where again the fallow is commenced by spraying, with spraying continuing until the sowing of wheat and lucerne. Seed cost for lucerne and medic undersowing with the wheat are about \$12.00/ha.

A number of sowing methods have been tried such as band seeding, furrow sowing, incorporating with harrows, sowing without cover crop, precision planting, and onto the surface from planes and airseeders.

Success has been varied but generally depends on follow up rainfall, stored moisture and weed control.

#### Economics of pasture production

As a local member of the Gulargambone Rural Advisory Service (GRAS), I am a participant in the annual Benchmark Analysis carried out by Hassall & Associates in the Gulargambone area. This process has now been running for 28 years and has generated valuable information in terms of key points that businesses should be targeting to maximise profit.

Table 1 shows a summary table of the last ten year's averages with regard to production performance. The comparison shows the average performance of the group compared to the top 20% of performers.

#### Points too consider

Firstly, Table 1 shows that the top performers in gross margins have less natural pasture but a larger proportion of lucerne in their businesses. From these pastures it can be seen that the top producers are obtaining an extra 48% in wool cut per hectare. This results in an improvement of \$36.20 in gross margin per hectare.

In regard to their cropping enterprises a 39% improvement in yield is achieved by the top 20% of

Table 1. GRAS comparative analysis ten year averages

	Top 20%	Average
<i>Wheat</i>		
Yield t/ha	2.50	1.80
Value of grain (\$/t)	161.08	139.26
Direct costs (\$/ha)	107.16	164.24
Gross Margin (\$/ha)	295.54	86.43
<i>Merino production</i>		
Wool cut (kg/grazed ha)	20.83	14.11
Wool value (\$/grazed ha)	82.49	50.37
Wool (cut/DSE)	4.60	4.00
Wool price (c/kg)	396.00	357.00
Direct costs (\$/DSE)	6.13	6.54
Gross margin (\$/DSE)	18.22	14.30
Gross margin (\$/ha)	82.50	50.44
<i>Area</i>		
Hectares	3346	2843
Natural pasture (%)	55	62
Lucerne (%)	15	12
Crop (%)	27	25

producers over the average. Also it can be seen that these top performers are producing higher quality grain as their value of grain is \$161.08 versus \$139.26. With an increase in yields and an increase in value of produce together these result in increased gross margins of \$114.48 per hectare.

**Key areas affecting our business**

*Matching stocking rates to pasture type and maximising stock gross margin.*

Figures 1 and 2 show how both stocking rates and wool cuts are improved from lucerne, this data relates to the 1995/96 data. These Figures show that planting approximately 20% of the total farm to lucerne is the optimal in regard to livestock performance. This allows for rotations with crops and rejuvenation of pastures to be carried out to maximise pasture performance.

*Producing quality grain and maximising yields.*

Over ten year averages, the top performers have a larger proportion of their property under lucerne

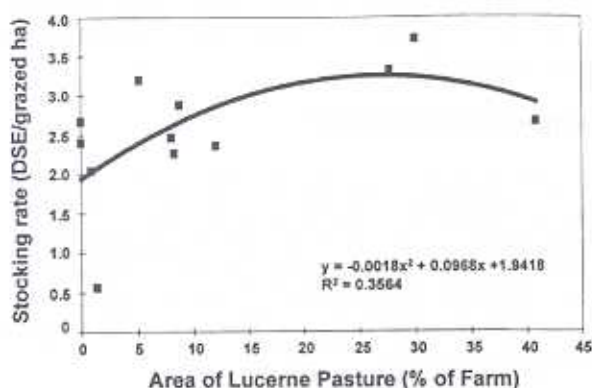


Figure 1. Merino stocking rate versus lucerne percentage

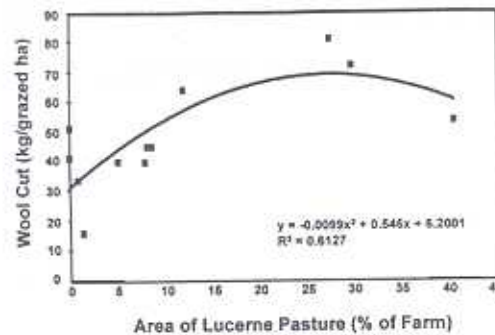


Figure 2. Wool cut/ha versus lucerne percentage.

and are consequently producing higher quality grain and improved yields.

Nitrogen fixation from the lucerne phase is critical for producing high quality grain. Research states that nitrogen fixation is in the order of 100-150 kg/ha/yr in our pastures. This is extremely valuable when nitrogen is now valued at \$1.00 per kilogram.

A three year lucerne stand is also generally regarded as a sufficient break for many of the yield reducing diseases encountered in our cropping phase.

*Increasing sustainability with good pastures.*

With increased production and gross margins the farming system can be seen as economically and environmentally sustainable. Farming our soils for short periods and returning then to pasture, reduces the exposure of the soil to degradation from erosion.

Improvements add significantly to land values, improvements in pastures assist in maximising returns, but also allow for improved soil conditions and an improvement in sustainability, therefore, protecting the value of our land into the future.

Figure 3 shows how land values in real terms have been declining, but properties consisting of improved pastures have shown from recent sales to be able to withstand the effects of reduced values.

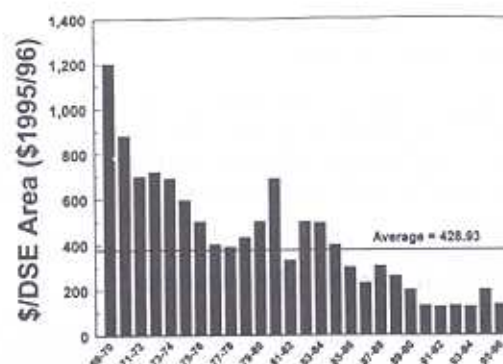


Figure 3. Land values in real terms 1969/70 - 1995/96.

**Conclusion**

Initially pasture improvement is expensive and requires commitment from the farmer. If the ground work is done properly the results will justify the expense and effort.

By analysing enterprise performance, areas of weakness can be identified and addressed to improve overall farm performance. One of the keys to profit is maximising turnover. Improved pastures such as lucerne play a major role.