

## Integrate or separate – the debate: integration case study 2

A. Donoghue

“Toolangatta”, Tambar Springs NSW 2381

### Outline of property and objectives

“Toolangatta” is an 1838 ha property situated 95 km south-west of Gunnedah in the North West Slopes with an average rainfall of 670 mm. It consists of 2 main soil types, being 50% black basalt and 50% sandstone based.

The enterprise mix has traditionally comprised of 600 stud hereford cattle (280 breeders) in which bulls are sold at 18 months and 2 years-of-age, and are finished on crop; merino sheep; cropping dual purpose winter wheat, traditional cereals and canola; and steer trading approximately 100-200 head/year depending on seasonal conditions, which are finished on both pasture and crop.

The main objective relating to crop production and livestock is to have a cropping enterprise which fits in with fattening and finishing both steers and stud bulls on an annual basis.

### How long and why have we been integrating cropping and pastures?

#### Dual purpose crops

The growing of dual purpose crops has been carried out for as long as my father and I can remember with the number one priority to fill a winter-feed gap for finishing cattle. In the early days, oats was grown to be grazed and then harvested for drought feed storage, as well as retaining seed for the following year's crop. In recent times, winter wheat has become the dual purpose crop of choice due to the ability to harvest and deliver wheat of ASW quality for income and cash flow.

#### Pasture phase

Implementation of pasture in the form of lucerne into the cropping rotation has been adopted over the past 15-20 years. This was prompted by:

- Ability of the pasture phase to increase nutrient level, mainly nitrogen fixation.

- Cessation of fallow both traditional and chemical, during the pasture phase.
- Ability to use different chemical groups during the pasture phase.
- In early years, a build up of soil structure due to country not being worked. No-till cropping has been undertaken for the past 8 years.

### What are the advantages?

#### Risk management

- The ability of a dual purpose crop to generate 2 incomes makes it an excellent strategy for minimising the risks associated with growing a crop for grain only.
- The impact that a late frost, hail and or rain at harvest will have on total crop income is considerably reduced due to the fact that around 50% of the income has already been received by grazing.
- There is not the reliance on waiting until harvest to receive the total income from your crop.
- A downturn in prices for one commodity (beef or grain) will have less of an impact on total returns due to a spreading of risk.

#### Stubble utilisation

- Annual grazing of stubble directly after harvest can give pastures a break and provide another income opportunity from the crop.
- Removal of stock from stubble in wet weather and also in the months leading up to planting seems to reduce compaction issues.
- Stubble can provide valuable grazing during dry spells and drought.

#### Gross margin

- Actual figures for 2003 (Table 1) show the returns for the crop of winter wheat to be very similar to

Table 1. Comparison between wheats H45 (grain only) and Marombi (graze and grain) on a per hectare basis in 2003

	H45	Marombi
Grain – yield (t/ha)	4.1	1.72
Grain income (\$)	738	310
Grazing – stocking rate (steers/ha)	-	1.08
Grazing – daily gain (kg/head/day)	-	1.52
Grazing income (\$)	-	304
Total income (\$)	738	704
Expenses – crop (\$)	184	117
Expenses – steers (\$)	-	5
Marketing – steers (\$)	-	38
Total expenses (\$)	184	160
Gross margin (\$)	554	544

the spring wheat returns, whilst having less risk associated.

### Herbicide resistance

- With herbicide resistance on the increase, a pasture phase on cropping country has 2 main advantages:
  - It allows the rotation of chemical groups.
  - It allows a break from using herbicides altogether.

### Pasture renovation

- The integration of livestock and cropping allows you to renovate your pasture paddocks by entering into a cropping phase which will clean the paddock whilst providing a substantial income.

### Failed crop options

- Growing an awnless winter wheat gives a variety of options to a failed crop, by way of grazing or the production of hay or silage.

### Winter-feed gap

- Dual purpose wheats and oats fill the winter feed gap when pastures are not productive.
- They also can provide rest for winter active pastures.

### Soil health

- A pasture phase on cropping country can be very beneficial to the build up of soil biota and carbon levels.

### What are the disadvantages?

#### Grazing of crops

- When growing a dual purpose crop, to maximise

returns it is vital to fully utilise the grazing potential of the crop. In a trading situation, it can be hard to purchase enough of the right class of stock to graze the crop effectively.

- If dual purpose crops are grown to fill a winter-feed gap then having enough stock to maximise grazing potential is not normally a problem.

#### Soil compaction

- Producers that have an enterprise mix of predominately cropping may consider soil compaction a potential problem.
- Soil compaction would be an issue if cropping is carried out using controlled traffic farming.
- The effect of livestock on soil compaction in a situation where there is no controlled traffic farming in place has potential to be no worse than compaction from machinery.

#### Feed wheat prices

- Feed wheat prices can affect the profitability of dual purpose crops.
- When growing dual purpose wheat, look for varieties such as Marombi which is certified to be delivered as ASW.

#### Grasshoppers

- Dual purpose crops are generally sown in March, and in years such as this their establishment can be affected by grasshoppers

### What is your advice to other producers?

- Look at your individual situation and determine whether or not integration of livestock and cropping fits in with your own visions and goals. There is no advantage in doing it if it is not what you want to do.
- If you are a livestock producer, your topography and type of soil (is it arable?) will have an influence on whether or not you can integrate livestock and cropping.
- The type of infrastructure and machinery may influence your decision. A livestock producer without machinery and with limited access to contractors may not choose to integrate. Similarly, a crop producer without any stock-handling facilities may also find it hard to justify integration.
- Consult technical advisors when something is outside your field of expertise. This would mean

using an agronomist on the crop side, and a similar consultant on the animal production side.

- The main component of growing dual purpose crops, which was touched on earlier, is the ability to maximise the grazing potential from your crop, with a class of livestock that will convert it to the greatest returns.