

‘The business of growing a meal’ – the application of new pasture varieties and management practices for intensive beef production

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Abstract. *This paper outlines the planning and operation of producing beef cattle, including supplying 110 head per month of finished animals to a retailer. The focus has been consumer-based breeding of cattle utilising tools such as ‘Breedplan’. The pastures are all introduced species based on phalaris, cocksfoot, tall fescue and various strains of legumes. Pastures are rotationally grazed and well fertilised with phosphorus, sulphur, nitrogen and molybdenum.*

‘Branga Plains’ is located on the southern end of the New England Tablelands in New South Wales at approximately 1,250 m above sea level. The property is 4,300 ha with predominately basalt and trap soils receiving an average rainfall of 900 mm.

The operation is 100 per cent beef cattle. In the past eight years we have moved from a long tradition of selling weaners at an annual on-property sale in autumn, to retaining and value-adding all steers and surplus females. This program of breeding all replacement animals is fully integrated with finishing stock and direct-marketing.

We moved from a commodity focus to a consumer focus with the implementation of a retail alliance in Sydney to supply 12 months of the year. This program has presented a set of production challenges. It requires the merging of agronomic functions, most of which we can measure to help make our operation more efficient. New technology within our industry has generated opportunities to advance production in the animal and plant fields. The Australian beef industry has developed probably the best genetic evaluation program in the world in ‘BreedPlan’. Using ‘Estimated Breeding Values’ (calculated by BreedPlan) has enhanced our ability to select bull ‘genetics’ to breed cattle with improved performance. This will allow us to maximise gains that have been made in pasture production.

Supporting our breeding and finishing program has involved realigning some paddock fence lines to facilitate efficient use of labour and plant production. A central laneway services the more intensive pasture paddocks. We consider this system along the lines of a grass feedlot. Our breeding herd is a segment of the factory type arrangement we hope to develop and maintain as part of our philosophy. A functionally efficient breeding herd has to be driven by fertility, which demands a reasonably constant supply of nutrition. The key profit drivers for this system are high

weaning percentages of calves with optimum growth, carcass traits and eating quality.

Measuring performance is dependent on a good recording system. This has been enhanced by the implementation of the National Livestock Identification System. This system gives us the advantage of having regular recording of weight gains and feedback on individual animals. Our system is dependent on the Meat Standards Australia (MSA) grading system as it gives us an independent assessment of our product. The science behind this system is based around consumer acceptance, and compliance is normally influenced by management practices that include nutrition. The concept of producing a graded product dovetails our animal and pasture production.

Different categories of cattle have to be catered for with different qualities of nutrition. We have designated areas in a tier system for breeding cattle, growing cattle and finishing cattle. With favourable seasons we would certainly like to see these areas overlap. The traditional ‘shotgun mixes’ of phalaris, cocksfoot, demeter fescue and various clovers have served us very well on the majority of ‘Branga Plains’. With an annual fertiliser program topping up a phosphorous deficiency, and with the addition of sulphur (and on a periodic basis molybdenum), these pastures support our breeding herd very well. This program is normally supported with the annual application of around 75 kg/ha/yr of blended fertiliser products. Grazing management has proven to be a major contributor to the quality of the pasture with noticeable differences in plant population and ground coverage. This has been helped by subdividing paddocks and increasing water points.

Supplying a market on a fortnightly basis with a continuous number of cattle has given us a regular cash flow and a challenge to submit cattle of consistent quality. When we first started this alliance around eight years ago we were excited because we had the numbers

and the genetics to undertake such a commitment. We also thought we had good enough pastures to ensure we could supply, with the help of some supplementary feeding. However, we have also had to experience rising feed costs which compromises the costs of production.

We started a pasture improvement program using so called 'high performance' species by upgrading into the new models like Quantum fescue, Lincoln rye, Astred red clover, Matua prairie grass, Puna chicory and a mixture of white clovers. This mix was planted in early February and was in production by the middle of May and is still going well today. We have since moved onto a program utilising tetraploid ryegrasses (both Italian and long rotation) with a two to three year retention. These grasses have given us excellent winter production and with their late flowering have continued to perform well into summer. One of the benefits of a 'break up' crop such as ryegrass is that it allows us to target weeds and undesirable grasses with a couple of chemical cultivations. Following the ryegrass, we are then planting tall fescues such as Advance and Quantum II with clovers, chicory and plantain. Outside normal New England tradition, we are also trialling annual clovers and so far they look spectacular.

Maintaining the productivity of these pastures requires several management inputs both financial and mechanical. During the growing season we are applying up to three topdressings with nitrogen (N) based fertilisers (at around 50 kg N/ha) along with our annual spreading of a phosphorous blend in the spring. An important ingredient is the input that we rely on from our agronomists. We have installed a stock watering system to facilitate rotational grazing. This consists of solar powered submersible bore pumps and troughing to enable us to run temporary electric fences to split paddocks into manageable areas and promote non-selective grazing. The palatability of the new pastures has promoted good utilisation of the whole area. However, to ensure an even sward we follow the cattle with a mulching slasher to 'top' each field as part of the rotation. This process also assists in the control of weeds such as scotch thistles.

The challenge of supplying about 110 head per month directly to our retailer is contingent on weight gain and carcass quality. The weight gain factor has been addressed by the use of good pasture and fertiliser allowing our genetics to express themselves with daily weight-gains in the vicinity of 1.8 kg/day during the warmer months. When these pastures are at the least fibrous stage, we give the animals access to straw in hay self-feeders. The critical control point of eating quality is monitored by the MSA grading system with factors such as weight-for-age, meat colour, fat cover included in our producer feedback with all these traits nutritionally

based. Individual animal identification on all animals gives us a constant monitoring system of animal and paddock performance with frequent updating from weighing cattle on a regular basis. Collection of these data has reinforced the fact that increasing productivity from our pastures has outweighed re-pasturing costs with larger numbers of animals coming off a selective area. Our calculations would suggest that we are producing upwards of 850 kg of beef per hectare from our intensive areas.

We are committed to, and enjoy supplying consumers with a product that satisfies their expectations of a more consistent eating experience, and we feel this will no doubt lead to producing cattle that are more profitable.

The challenges that confront our industry are becoming quite evident at the moment, and they are being driven from both inside and outside our country. The US Government's decision to mandate ethanol production coupled with unfavourable seasonal conditions in a lot of countries (including our own) has put pressure on our intensive grain feeding industries. The situation has arisen that we now have competition between the feedlot industry, food industry and the ethanol industry for grain and grain-growing country. In the US, we have seen the price of corn doubling in price in the last two years, which not only challenges the feedlot industry but all intensive livestock industries. We are constantly being made aware of the threat that climate change poses, and now we have high input-costs such as herbicides, fertilisers and fuel. Hopefully the answer will be in grass production of our red meats with the constant research and development of better pastures, because this where Australia has a definite advantage.