

MANAGEMENT OF THE PASTURE COMMUNITY:

MANAGING THE FEED-YEAR FOR BEEF PRODUCTION

Allan Every

"Woodlands", Ben Lomond, NSW, 2365.

SUMMARY: "Woodlands" and "Beulah" comprise 1,010 ha at Ben Lomond on the northern tablelands of New South Wales. The principal enterprise is backgrounding beef cattle to produce feeder steers for feedlots. About 80% of the farm area is intensively developed with either permanent pasture or short rotation pasture/forage. Current results show cattle performance of 300 kg liveweight gain/ha/year. The management program puts emphasis on: (1) improving soil nitrogen status by fostering legume persistence; (2) maintaining optimal grazing pressure through monitoring paddock performance; (3) integrating short rotation pasture/forage to provide spells for permanent pasture; and (4) evaluating new cultivars that show promise of improved agronomic performance and drought tolerance.

The question that has to be asked of any grazing system is what is it producing and how much is it costing to produce this amount? About five years ago I asked myself this question and felt very uncomfortable with what I saw. When I sat down and quantified the figures it caused some drastic decisions to be made. Things needed to change if we were going to survive in the long term. What did we do? Basically we took a more business like attitude in our enterprise.

Our enterprise

My wife and I are involved in two steer fattening and growing out joint ventures.

The first involves approximately 890 ha of red basalt country on which we run 500 steers on a growing-out contract with Ranger's Valley Feedlot at Glen Innes. In addition we also run approximately 300 steers of our own, principally blacks and

greys, mainly targeting feedlot markets. Of this area approximately 60% is highly pasture improved, 15% is sown to short term high performance pasture, and the remainder is basically natural country with an introduced clover component (Table 1).

The second involves 120 ha of brown clay loam country on which we graze 250 steers again basically growing out for feedlot markets and principally concentrating on blacks and greys with a small proportion of Hereford cattle. This enterprise consists entirely of short term high performance pastures (Table 2).

In addition to these grazing ventures, I also operate an agricultural contracting business which provides a substantial amount of off-farm income.

Where we have come from?

Three years ago our operation centred around wool growing and a small cattle breeding enterprise.

Table 1. Pasture breakup on "Woodland" and "Beulah" - 890 ha.

Permanent Pasture Mixes - 530 ha

1. Australian phalaris, Currie cocksfoot, Victorian perennial ryegrass, New Zealand white clover
2. Demeter fescue, Australian phalaris, Currie cocksfoot, New Zealand white clover

Medium term high performance pasture mixes - 80 ha

1. Concord ryegrass, Conquest ryegrass, Kangaroo Valley ryegrass, Porto cocksfoot, New Zealand white clover, Haifa white clover, Cowgrass Red, Puna chicory
2. Puna chicory, Roper Ryegrass, Cowgrass Red, New Zealand white clover, Haifa white clover

Short term forage mixes - 60 ha

1. Concord ryegrass, Cowgrass Red, MPT Turnips

Natural Grass Mixes - 220 ha

1. Poa tussock, Red grass, *Danthonia*, *Microlaena*, New Zealand white clover

Table 2. Pasture breakup on "Glen Eden" - 120 ha.*Short term forage mixes - 65 ha*

1. Concord ryegrass, Cowgrass Red, New Zealand white clover, Haifa white clover, Puna chicory

Medium term high performance pasture mix - 25 ha

1. Concord ryegrass, Conquest ryegrass, Roper ryegrass, Porto cocksfoot, Cowgrass Red, New Zealand white clover, Haifa white clover, Puna chicory

Annual forage mix - 30 ha

2. Pasdja, Pro-grow ryegrass

I was not happy with the outlook for our viability in the short term. I was also concerned with the damage to our pastures as a result of overstocking during a succession of dry seasons. So we made the decision to sell off all our own stock and opt for "backgrounding" instead. We saw this as a means of providing a steady income and a way of giving us the capacity to regulate our stocking rate for the long term benefit of our pastures. Growing out cattle, bought from local breeders, was a natural progression and had the effect of further increasing our income.

So basically I am new to the cattle industry and I am the first to admit that there is a lot I still have to learn about growing out steers. In one way this has been positive because I have started with a clean slate, free of any prejudice, preconceived ideas or emotional tie-ups. By emotional tie-ups I mean we do not have the problem of being locked into years of breeding in our enterprise. The cattle come and go without any fuss or heartache. This has freed us up to achieve the goals we have set ourselves.

Our goals

These can be divided into two areas: stock and pastures.

Stock

Ranger's Valley agistment cattle

Our aim with these cattle in a normal season is to turn 1000 head over per year at growth rates of 0.6 - 0.7 kg/day, which returns us gross approximately \$100/hd. The longest period of time we like to take to achieve feedlot specifications is ten months.

Our own cattle

These are the cattle from which we seek to make the most profit. In order to achieve this we set ourselves strict parameters on the cattle we buy in. We only buy cattle between 250 kg and 360 kg liveweight. We try to buy cattle with historically

good growth rates to achieve between 0.8 - 1.0 kg day. I prefer to buy cattle on a cents/kg basis and I never pay more than the current feedlot rate. The goal I set for these cattle is a net return of \$10/hd/week. For the most part the turn around time for these cattle is between 2 - 8 months. As far as the cattle are concerned, I think these are achievable goals in a normal season. Certainly the drought knocked a dent in our goals for the RV cattle last year. Our own cattle had a better plane of nutrition, and because of favourable buying/selling margins we have basically achieved what we set out to do over the last year for this enterprise.

Pastures

The goal for our pastures is to improve their quality and quantity and to attempt to even out grass production throughout the whole year.

The challenge

The challenge is obvious; to provide a plane of nutrition for our stock to achieve our goals. Basically, to put as many kilograms on each beast as possible, in the shortest amount of time, while at the same time ensuring the sustainability of the enterprise in the long term.

Taking up the challenge

Now without a doubt, the greatest single problem to achieving high growth rates in cattle for us is being able to maintain an adequate plane of nutrition on a year round basis. The limiting factor in achieving a required plane of nutrition is the climate.

Our property is situated at an altitude of approximately 1500 m. We have a summer dominant rainfall pattern with a yearly average of 900 mm. We can expect about 80 frosts and half a dozen or so falls of snow. Traditionally, even though rainfall is summer dominant, we have enjoyed reasonably reliable yearly rainfall distribution. However, over the last decade that distribution seems to have become pretty unreliable and we seem to be experiencing protracted dry periods followed by short periods of above average rainfall. As I see it, this has resulted in a number of things occurring:

- Shortened productive periods of improved species
- Increased competition from annual weeds
- A build-up of insect pests
- Reduced clover component of improved pasture stands.

Table 3. Medium term high performance pasture production figures and gross margins -24/5/94 to 28/2/95.

Area - 56 ha
Sowing and maintenance costs - \$26,242 (\$436/ha)
Stock turnover - 382 steers
Net trading profit from steers - \$39,462
Gross margin for period - \$13,220 (\$236/ha)
Total production for period - 596 kg/ha
Average liveweight gains - 1.12 kg/day

So when we considered our feed-year plan, we basically had to overcome a winter/early spring shortfall caused by an alpine climate, and a late summer/early autumn shortfall caused mainly by weed invasion and clover deficient pastures.

As we considered moving from a breeding enterprise to a fattening/growing enterprise, it was quite apparent that our pastures had to have the highest priority in terms of capital expenditure. If we were going to maximise weight gains then we had to maximise protein levels and digestibility in our pastures. In order to achieve this objective we have employed the following management decisions:

- We have given a high priority to increasing nitrogen status of our soils by ensuring the persistence and health of the clover component of our pastures. This has involved maintaining better monitoring of soil nutrient levels, regular applications of fertiliser and trace elements; annual assessments of pasture sward to determine annual weed infestation levels and using herbicide applications where needed; undertaking control measures for insect pests, especially mites, when required
- Monitoring grazing performance of paddocks and adjusting stocking rates to ensure pastures are neither undergrazed nor overgrazed
- Growing a regular area of short term, high input, high performance pasture to take the pressure off our permanent pastures in our low growth period
- Introduction of some better suited varieties of permanent species into our pasture mixes to increase production and drought tolerance; mainly different ryegrasses, cocksfoot and puna chicory.

My philosophy has been to ensure that a pasture reaches its full potential. I do not cut corners when it comes to my biggest resource. To give an example, last year on our high performance pasture we spent in the order of \$463/ha to establish and maintain it. This seems an extraordinarily high amount, but the results we achieved were also pretty spectacular. In nine months grazing we had a gross mar-

gin of \$236/ha, after total production of 596 kg/ha of beef at an average live weight gain of 1.12 kg/day. And this was in a drought year! (Table 3). As far as my pastures are concerned I would rather do without elsewhere than compromise their long term persistence and production.

The results so far....

Increased production

In our first year of production we produced approximately 197 kg of beef/ha. Last year despite 9 months of drought our production figures came in at almost 300 kg/ha. In this result the largest performance gain from our system was the improved weight gains through the normally unproductive months. Being able to achieve weight gains of 1 kg/day through the winter months on our high performance pasture paddocks has meant we are able to turn off cattle when traditionally this is unexpected.

In addition to this, our experience with Puna chicory has encouraged us to include it more and more as a part of our pasture system. It has exceptional drought tolerance and excellent production in terms of both quantity and quality over the spring/summer/autumn months.

Overall, I have found it particularly helpful to have paddocks available where you know you can achieve high weight gains. This allows much more accurate forward planning in terms of stock movements on and off. I suppose like so many of us, I look forward to one day enjoying a consistent season for a couple of years just to see what we are capable of. In my own mind I think our pastures are capable of around 350 kg+ /ha/year.

Stronger pastures

Our pastures have responded well to new management strategies. They are more able to cope with dry periods and respond quicker to rainfall. The sward itself is much thicker with less undesirable species. This has lifted our digestibility and in turn increased production.

Better utilisation of capital

Initially we spent a large amount of capital to reclaim our pastures, and there is no doubt it stretched our cash flow. But having gone a fair way down this track it gets easier. There is no doubt it is cheaper to keep pastures healthy than it is to establish a new one. We are just starting to see light at the end of the tunnel in terms of seeing returns for our investment.

The frustrating thing as I travel around doing pasture work for other people, is the extent to which money is wasted on poor planning. I find all too often that it is the simple steps that are neglected. The ridiculous thing is, that it is these steps in the cost of the whole pasture that are often the cheapest. "Cost saving" measures like not spray-topping, or cutting seed and fertiliser rates are pretty insignificant in the cost of establishing a new pasture. There can often only be \$20 or \$30/ha difference in cost between a good and bad job. Yet time and time again I see producers spend the first \$200/ha on establishing a new pasture and skimp on the last \$20, or the \$30 to \$40/ha/year that is often skipped on maintenance. I suppose the old adage "pouring good money after bad" applies in many cases.

Greater satisfaction from the whole enterprise

Three years ago the outlook for sustainable farming practices on our property was pretty bleak. The property was always only three weeks away from a drought. Pastures were deteriorating. Production was slipping. In short we were in a vicious downward cycle. I feel a lot happier in myself now that I am doing a much more efficient job on our stock, as well as being a good steward of our land and pastures.

Where to from here?

The success of any system can only be gauged over a reasonable length of time. The "proof of the pudding" will be measured by our long term viability and the health and productiveness of our soils and pastures ten or more years from now. I am not one to "rest on my laurels" and there are a number of things I would like to address in the coming years to further improve our production levels. These include:

Improving my pasture assessment skills

We all have a "degree" of expertise in deciding the relative worth of a paddock of feed in meeting the nutritional requirements of stock. However, for myself this "expertise" is basically hit and miss in terms of assessing protein levels, dry matter per hectare and digestibility levels. If I want to accurately manage my pastures to maximise production while at the same time minimising pasture degradation, then I need to have a firm handle on assessment techniques. I think the Pro-graze workshops have a lot to offer, and there is some useful computer software being developed to assist in assessing the value of feed in a particular paddock.

Supplementary feeding

While we are able to achieve good growth rates off our high performance pastures during the winter months there are limits to the number of stock we can have in these paddocks. The remainder have to make do with permanent phalaris/cockfoot pastures and natural grass country. These are at best, only capable of maintaining body weight. Although in a reasonable winter you would expect small growth rates of about 0.3 - 0.4 kg/day off the improved pasture. However, following very dry autumns the last three years, our pastures have had insufficient bulk to achieve much in the way of weight gains through winter. In reality if we have maintained body weight through this period then we have been delighted.

I am impressed by the results that other producers have achieved with supplementary feeding, especially with silage, during these periods of feed shortage. The feedlot that we background steers for, regularly supplements their paddock steers through the winter-months with maize silage. And despite pretty poor paddock feed conditions, they are able to maintain growth rates of 0.6 -0.7 kg/day during these periods. This has to be a big advantage.

This year we had almost 300 steers 20 kg away from minimum feedlot entry weights at the beginning of May. With the season deteriorating rapidly it would have been a great bonus to have a source of high quality supplement to ensure these steers were turned off before June. To this end we need to do some fodder conservation work. My choice would be to develop some of the chicory/clover pastures, or planting a summer forage crop such as a millet/cow-pea mix, or even straight soybeans, with the view to conserving about 200 tonnes of round bale silage.

Ensuring that our pasture improvement plan is followed through

The temptation when you are getting tremendous results off short term pastures is to keep sowing larger areas to them. Eventually these areas need to be sown down to something that will last twenty years not five years. It would be a mistake to have too large an area of short term pasture and be faced with having to discard a permanent pasture plan because of cash flow problems. We have really developed a lot of country in the last four years and we need to make sure that this country is consolidated.

Fertiliser, weed control and stocking rates need to be monitored closely to ensure the longevity of

these pastures. The last thing I want to be doing is resowing them in four years time. Much of our country is not suited to continuous farming. It is very rocky and the less you have to touch it the better. This all takes planning. Budgets have to put together, stocking rates have to be adjusted. The last thing you want is an *ad hoc* approach.

Improved grazing plans and records

I would like to keep better records of paddock performance so we can address any problems that arise before they become too costly. This would also allow us to better quantify any gains in production through different management practices. At present we are conducting a trial in conjunction with NSW Agriculture and Incitec to assess production and gross margin increases in a high input pasture system. For my part this involves keeping detailed records of stocking rates, weight gains etc. At present my computer system can handle this satisfactorily. However, I would like to extend this to include analysis records, management practices etc for the whole property on a paddock by paddock ba-

sis. To do this I really need to update my computer system. There are still production gains that we can gain by implementing better grazing techniques, especially on our high performance pasture. We have used electric fencing to rotationally graze our short term forage crops with great success, and I feel we should be doing more with our medium term pastures, such as the chicory/clover pastures.

Conclusion

The enterprise I am involved in is a challenging one, as are all agricultural enterprises. The rewards are there for those who want to embrace the challenge. The challenge is efficiency and maximising cost/price margins in our favour. It involves planning, record keeping and hard work. Our program is based around achieving this. It is a pretty simple recipe really, there is nothing revolutionary about it; it is not a blueprint for success in every case. In our enterprise there is a lot of room for improvement, but I am satisfied that we are giving it our best shot with what is available to us, and I think that is important.