

94/SA06



## Producer Research Support

Fertiliser, grazing pressure the keys to profitable beef

Furner Beef Group



Beef production from pasture can be enhanced by additional phosphorus fertiliser and increased grazing pressure, as this Producer Research Support project undertaken by the Furner Beef Group in South Australia has shown.

### Key points

- The project changed the focus to management practices that can increase growth rates.
- The cost of additional fertiliser provided a significant economic return through the sale of additional kilograms of beef.
- The additional beef produced met the carcass specifications set at the beginning of the trial.
- Producers involved in the trial gained significant practical knowledge of assessing pasture in terms of both quantity and quality throughout the growing season.
- They also assessed animal performance and developed a better understanding of animal production responses to pasture.

### Contact details

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### The project

Beef production from pasture can be enhanced by additional phosphorus fertiliser and increased grazing pressure, as this Producer Research Support project undertaken by the Furner Beef Group in South Australia has shown.

Improving pasture management has long been regarded as a high priority among members of the Furner Beef Group.

The ability to supply high quality cattle year-round, from a predominantly pasture base, is considered vital to ensure continued access to premium markets identified and targeted by the Furner Beef Group.

Considerable time and expense has been involved in renovating and maintaining pasture, however the results have not always been predictable. Identifiable solutions to the problems of pasture establishment have not been readily implemented by producers either.

The project was conducted on three private properties in the Furner area of the south east of South Australia.

In all three cases, the cost of additional fertiliser provided a significant economic return through the sale of additional kilograms of beef. The additional beef produced met the carcass specifications set at the beginning of the trial.

The producers involved in the trial gained significant practical knowledge of assessing pasture in terms of both quantity and quality throughout the growing season.

They also assessed animal performance and developed a better understanding of animal production responses to pasture.

Many discussions arose from groups of producers observing the trials in their local area, and being involved in providing input into managing the sites.

### Objectives

1. Identify and demonstrate methods of successful establishment and maintenance of high producing pastures in the Furner area;
2. Enhance the skills of group members in assessing pasture;
3. Monitor alternate pasture management techniques, and compare costs of different methods; and
4. Develop best bet pasture management strategies for the main soil types in the area.

## What was done

The project commenced with a group activity day. Geoff Saul and John Graham, from the Pastoral and Veterinary Institute at Hamilton, Victoria, provided the Fumer Beef group members with basic training in animal and pasture assessment.

Group members then selected the three soil types representing the major soils in the area. The group was then divided into three smaller groups, depending on interest in particular soil types.

These subgroups were given responsibility to identify and manage a paddock within their group. The paddocks identified represented sand over clay, deep sands and black clay.

On each property, a paddock of similar size and soil type was also selected to provide a control. Each sub group then outlined the characteristics of the paddock and the current management.

Opportunities for improving productivity were then identified, and strategies developed. In all cases, the strategy incorporated higher rates of phosphorus fertiliser, and increased grazing pressure. Other strategies included insect control and broadleaf weed control.

The field work commenced on the Naraweena site with the introduction of an additional 50 yearling steers to effectively double the stocking rate on the 'productivity' paddock.

Increased stocking pressure was introduced to the productivity paddocks on Caltapa and Acacia.

Group members undertook a PROGRAZE course. During the PROGRAZE course, group members assessed livestock and pastures involved in the trial, thus collecting trial data at the same time as acquiring practical skills.

Data collected included dry matter availability and botanical composition of pasture, as well as liveweight and fat score of animals.

## What happened?

### Naraweena

Both paddocks were identical in size and the stocking rate of the productivity paddock was twice that of the control.

However, the growth rate of the steers in the productivity paddock was comparable with that of the control. The productivity paddock produced 3,100 kg more liveweight gain than the control (6470 kg liveweight gain vs 3,370 kg liveweight gain).

The productivity paddock received an additional 90 kg/ha of Goldphos 10 (140 kg/ha at 50 kg/ha Goldphos 10). The growth rate of the steers in the productivity paddock was comparable with that in the control.

In the second season, between October and February, the productivity paddock produced 6,282 kg more liveweight gain than the control (12,934 kg liveweight gain vs 6,652 kg liveweight gain).

The productivity paddock received an additional 70 kg/ha of Goldphos 10 (140 kg/ha at 70 kg/ha Goldphos 10).

The results in the 1994–95 season equate to an additional \$68 per hectare (3,100 kg @ \$1.1/kg for 50 head) for the additional outlay of \$25 per hectare for fertiliser — a return of 273%.

In 1995–96, the results were an additional \$125 per hectare (6,282 kg @ \$1/kg for 50 head) for the additional cost of only \$28 per hectare for fertiliser — a return of 446%.

## Producer Research Support

MLA Producer Research Support offers support funding of up to \$15,000 over three years for groups of producers keen to be active in on-farm research and demonstration trials.

These activities include:

- Producer Initiated Research and Development
- More Beef from Pastures demonstration trials
- Prime Time Wean More Lambs demonstration trials
- Sustainable and productive grazing grants.

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## MLA also recommends BeefPlan

BeefPlan is a non-traditional approach to learning. Groups of like-minded beef producers, work together as a management team to focus on property management. Importantly the learning agenda is set and controlled by the group.

Contact Steve Banney - Project Coordinator

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## Cattalpa

On this site, because the paddock chosen as the productivity paddock was previously not nearly as productive as the control due to differences in soil type, the challenge was to improve the productivity paddock to equal the control.

The performance of both groups of calves was very similar during 1996. The productivity paddock stocking rate was lifted by one extra cow and calf unit.

During the 1995 season, the pasture in the productivity paddock improved particularly in terms of clover content.

The most significant difference between the two paddocks was the much reduced use of supplementary feed used in the productivity paddock. Only two tonnes of hay (cost \$180) was fed to 16 cows with calves compared with 7.7 tonnes of hay (cost \$693) fed in the control.

The total cost of feed (fertiliser plus fodder) was \$808 (\$56 per ha) for the productivity compared with \$1,216 (\$74 per ha) in the control.

Animal health costs were slightly higher in the productivity paddock as the calves received a drench whereas the control group did not.

The clover content in the productivity paddock appeared to have improved considerably over the previous year, although this visual observation was not as apparent when measurements were taken.

Pasture in the productivity paddock seemed to be denser and leafier, and would be more nutritious for grazing livestock.

One significant change in management of the control paddock was the significant reduction in supplementary feeding. This reduced the economic difference between the paddocks.

## Acacia Park

The two paddocks chosen were originally one large paddock divided in two.

The paddock used as the productivity paddock was sown to improved pasture species, following a rape and millet fodder crop.

The control paddock has not been touched, except for regular fertiliser applications, since pasture was sown after tree clearing 20 to 30 years ago.

The strategy selected for the productivity paddock was to increase phosphorus fertiliser application from 80 kg per hectare of Goldphos 20 to 110 kg per hectare of Goldphos 20. Stocking rate was also increased from 15 cows with calves at foot to 20 cows with calves.

The improved production could partly be attributed to seasonal variations, but was also largely due to the improvement in pasture composition due to the increased grazing pressure imposed on the productivity paddock during the spring months.

During the season, the pasture composition in the productivity paddock also displayed a significantly higher proportion of perennial grasses, as well as fewer broad-leaved weeds.

This was reflected by the significantly higher stock loading compared with the control (17.5 DSE vs 12.8 DSE).

However, due to the late break to the season, when the pastures were assessed in July, the productivity paddock had a much lower proportion of clovers, with annual weeds invading the pasture.

Subsequently, the carrying capacity of the productivity paddock was reduced.

Interestingly, the control paddock carried a higher stocking rate than the previous season, although still lower than the productivity paddock.