

99/Q12



Producer Research Support

Assessing Buffel Grass Pasture Quality

Western Queensland Beef Research Committee



The project

Michael McKellar, Booka, Morven, Queensland, said the aim of the project was to develop tools to better manage seasonal changes in buffel grass nutritional values.

The group wanted to develop strategies based on buffel grass pastures that would maintain post-weaning growth or improve animal performance by 0.5kg/day by feeding a ration of whole cottonseed at a rate of 1kg/head/day.

Mr McKellar said following the introduction of buffel grass over large areas of Western Queensland, it had become apparent that cattle grazing these pastures were often nutritionally deficient in winter.

Buffel grass may also have some nutritional deficiencies during the growing season. Producers need to match the dietary needs of their cattle with available feed to achieve optimum, cost-effective production.

The group set out to identify if supplementing cattle on buffel grass pastures to either reduce weight loss or production feed for weight gain during winter is cost-effective. They sought Producer Research Support funding to assist with the cost of NIRS (Near Infrared Reflectance Spectroscopy) analysis of faecal samples to identify any limiting nutrients which may be present in buffel grass pastures at various growth stages.

- To refine current techniques for assessing the nutritive value of buffel grass to better supplement or 'production feed' at any time to achieve optimum productivity at least cost;
- To develop a profile of buffel grass production to enable effective supplementation; and
- To correlate the nutritional value of buffel grass with visual faecal appearance.

Objectives

1. Identify the limiting nutrients in buffel grass at various growth stages and seasonal change. These changes will be identified by lab analysis;
2. Relate the nutritional quality of buffel grass to the physical appearance and stage of growth of the plant. The nutritional quality will be measured by faecal and pasture analysis. The appearance will be photographed and the stage of growth will be measured; and
3. Maintain or improve animal performance by 0.5kg a day. Measure the difference in kilograms of weight gain between a control group and trial group fed supplements and protein.

The Western Queensland Beef Research Committee wanted to develop strategies based on buffel grass pastures that would maintain post-weaning growth or improve animal performance by 0.5kg/day by feeding a ration of whole cottonseed at a rate of 1kg/head/day.

Feeding weaner cattle supplements in a western Queensland environment resulted in higher weight gain. But the gains may not be as high as those achieved in a good season.

Contact details

Michael McKellar
Booka
MORVEN QLD 4468
Tel (07) 4654 9142

Key points

- Regular weighing helps target supplementary feeding.
- Cottonseed can be a cost effective supplement in weaner cattle grazing buffel grass, depending on cattle prices and feed costs.
- NIRS (Near Infrared Reflectance Spectroscopy) is a valuable tool when used to strategically target supplementation.
- The complexities of nutrition in cattle grazing buffel grass pastures highlights the need for extensive research by scientific staff.

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.

Contact Stephen Feighan - MLA Project Manager, Producer Delivery and Adoption.
Tel (02) 9463 9245 or
sfeighan@mla.com.au

What was done

The physical appearance and stage of growth of buffel grass was recorded to develop a production profile to plan effective supplementation, using DPI and CSIRO expertise in their research.

Cattle used in trial were drenched with 25 ml Maxi Pro (a chelated trace element drench) and were weighed and identified. Trial cattle were fed a whole cottonseed meal supplement at 1.0kg/head three times a week, and a urea supplement in the water at a rate of 30 to 50 grams from June to late October when a significant rain stimulated grass growth.

The control group of 40 head did not receive these supplements..

What happened?

Weaner cattle that received a chelated trace element drench and fed one kilogram of whole cottonseed three times a week from June through to the end of October were 100 kilograms heavier than their unsupplemented control group.

Faecal samples were analysed and correlated with photographs taken of the buffel grass at various growth stages.

The adjusted trial weights, taken six times at regular intervals, were charted against dietary crude protein and digestibility, which are key factors in animal performance. The target gain of 0.5kg a day was achieved for a short period but not over the length of the trial.

Discussion

As a result of the project, Mr McKellar said some producers involved in the trial were spike feeding their cattle to achieve target weights for markets or joining, or to maintain fat scores for joining.

He said the feeding method – the way the supplement is fed and availability of supply – was vitally important to the desired outcome and the NIRS is a valuable tool when used to strategically target supplementation.

"The funding from Meat and Livestock Australia definitely helped our group," Mr McKellar said.

There are many complex variables such as maturity patterns, age of livestock, and growth rate responses in pasture that all affect the outcome dramatically. The outcomes from this trial show the complexities of nutrition and the need for more extensive research to be carried out by scientific staff," said Mr McKellar.

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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

Tel (07) 4093 9284 or
sdb@austarnet.com.au

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Meat and Livestock Australia

Level 1, 165 Walker Street
North Sydney NSW 2060

Tel (02) 9463 9333

Fax (02) 9463 9393

Free Phone 1800 023 100 (Australia only)

www.mla.com.au

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He said the planned outcomes from the trial were not realised and many questions in relation to nutritional management needed to be investigated in depth.

"Long term trials conducted by departmental staff over long periods of time are needed to gain any real conclusions."

Mr McKellar said the group planned to continue with the project with monthly weighings, and faecal and pasture samples being assessed, in order to use this information to accurately determine the timing and type of supplements needed to keep their cattle growing to their satisfaction.

The group's objective continues to be a 0.5kg/day improvement in animal performance.