

96/Q09



Producer Research Support

Energy, protein limit production in south-west Queensland

Western Queensland Beef Research Committee



Energy and protein have been identified as the major factors limiting livestock production on box-mulga country in south-west Queensland.

This was among the major findings of this Producer Research Support project, undertaken by the V-Gate Bestprac group.

The project

The V-gate project started as an investigation of what were considered to be the major limiting factors on animal production in the region. Energy and protein have been identified as the major factors limiting livestock production on box-mulga country in south-west Queensland.

"This is especially the case in the drier months of June, July and August," said group spokesman Neville Morris, Mitchell, Queensland. "Phosphorus, sodium, copper and perhaps zinc are the minerals most likely to be deficient."

Mr Morris said the V-Gate Bestprac group gained a clearer understanding of the complex interrelationships governing stock nutrition on different soil types and pastures after completing the Producer Research Support project.

"Prior to this research, supplementation had been limited to occasional phosphorus, often given at the wrong time and with mixed results," Mr Morris says.

A SWOT analysis and problem and opportunity identification was conducted which determined the project's objectives.

These included:

- determining the critical limiting nutrients in different land types at different times of the year;
- gaining a better understanding of soil, plant and animal nutrition interaction; and
- developing best options and protocols for trials aimed at improving nutritional management of livestock in the region.

Objectives

1. Conduct investigations in the box-mulga area of south-west Queensland;
2. Determine the critical limiting nutrients in different land types at different times of the year; and
3. Gain a better understanding of soil, plant and animal nutritional interactions; and to develop the best options and protocols for trials aimed at improving nutritional management of stock in this area.

Contact details

Neville Morris
Kandimulla
Mitchell QLD 4465
Tel 07 4623 2787
Fax 07 4623 2787



Key points

- Energy and protein have been identified as the major factors limiting livestock production on box-mulga country in south-west Queensland.
- The V-Gate Bestprac group gained a clearer understanding of the complex interrelationships governing stock nutrition on different soil types and pastures.
- Salt supplementation is worth further investigation.
- Big savings can be made through reduced supplementation when stock are grazed on cleared land.

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 Gerald Martin
Producer Research Support Coordinator.
Tel 08 8556 2900 or
producersupport@mla.com.au

What was done

Surface soil samples to 100 millimetres in depth were analysed from a range of soil types from best to worst on group members' properties.

Twenty-four pastures and 12 sets of animal samples, including a P screen for blood, dung nitrogen and phosphorus, and blood for serum biochemistry, were collected for analysis. Pregnant maiden ewes and heifers, usually the most susceptible to any deficiencies, were used.

The tagged stock were weighed from three members' properties in:

- early June, while the grass was still green but before the frosts started;
- late July, after many frosts and the grass had dried off;
- early September, before the season broke; and
- early November, after spring rain when the grass was at its best.

Four water samples were taken for mineral analysis from two bores and two dams. Mineral content of water can affect salt intake and the ability to administer urea and phosphorus supplements through stock water.

Discussion

An appreciation of the role salt can play in animal nutrition and performance and the effect of salt intake through bore water compared with dams or supplementation was among the knowledge gained.

Mr Morris said an associated trial to investigate the effect of feeding additional salt (sodium) in adjoining paddocks of similar box-mulga country in south-west Queensland showed the sheep fed salt gained 1.7 kilograms per day, while the sheep without salt lost 0.9 kg per day over a two-month time frame.

"This indicates that salt supplementation is worth further investigation," Mr Morris said. "It also indicates that animal intake and response to blocks or licks in this country may sometimes be a response to salt in the supplementation, especially in herds with access to surface water only."

Mr Morris said stock on bore water would be getting sufficient sodium.

Another valuable lesson was the importance of identifying the compatibility of water with proposed supplements. If urea or phosphorus was added to alkaline water with high levels of magnesium, for example, the consequent insoluble magnesium ammonium phosphate formed would be deposited in poly-pipe, clogging the whole pipeline.

For urea to stay in solution the water should have a pH of 5.5 to 7. He said as a result of the project, V-Gate Bestprac members learned that significant changes in soil analysis can occur as a result of timber clearing, which allowed better pasture growth with higher nutrient content, without the need for supplementation.

96/Q09



On one property involved in the project, cattle run on timber country were originally phosphorus deficient, resulting in the spending of up to \$12,000 a year on phosphorus supplements.

The soil, plant and animal analysis on the nearby cleared country challenged the need for these supplements to be continued.

"This is potentially a huge saving," Mr Morris said. "The owner of the property now plans to monitor weight gains between similar mobs with and without supplements to see if he can eliminate this expense in future."

Mr Morris said further on-property trialing with phosphorus, copper and salt supplements was needed.

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

EDGEnetwork

EDGEnetwork offers practical field-based workshops to improve productivity and profitability for the long-term.

Workshops cover breeding, nutrition, grazing management, marketing and selling.

Call MLA on 1800 993 343 or
www.edgenetwork.com.au

Meat & 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

Energy, protein limit production in south-west Queensland

July 2006 / PIRD OUTCOMES