

Lime-pasture- animal interaction: Northern Tablelands demonstration

Clare Bentley and Mick Duncan

NSW Agriculture, PO Box 991, Armidale NSW 2350

A Community demonstration/trial is being conducted by the Glen Morrison Landcare Group to investigate animal production from pasture paddocks topdressed with lime or dolomite. Glen Morrison is situated 20 km south of Walcha on red basaltic and granite-derived soils. pH values from the demonstration site are around 4.3 (CaCl₂). Lime is indicated on these low pH and high aluminium soils to improve pasture growth. The Landcare demonstration trial arose from a perceived need to investigate the economics of lime application in grazing enterprises.

Methods

Pasture paddocks with similar ryegrass/clover mixtures that had received lime or dolomite (applied from 1997) were used for the trial. Pastures with the same composition but which had not been limed were used as the control. All paddocks had the same fertiliser and grazing histories. Cattle were weighed on and off these pastures and, when not on

the trial paddocks, were grazed in nearby paddocks. Soil samples had been taken sporadically since 1990, and further soil samples were taken during the course of this trial. Pasture samples were taken from lime, dolomite and control areas to measure feed quality.

Results

Over 94 days during summer, animal grazing the limed paddocks gained 43% more (0.92 kg/ha/day) than those grazing the unlimed sites (0.64 kg/ha/day). Weight gains were not taken from the areas where dolomite had been applied. Pasture crude protein levels were 16.6% (lime) and 16.1% (dolomite) compared to 13.6% on the unlimed area. Energy and digestibility figures were similar for all sampled areas.

Soil tests indicated that neither pH (4.3 CaCl₂) nor aluminium (17.3% of total cations) had been significantly altered by any treatment. This apparent

discrepancy could be due to differing sampling and laboratory techniques, as the earlier sampling was not part of a formal trial. Further testing will be carried out using rigid sampling protocols.

Discussion

The authors stress that this demonstration is not a research project, designed to produce statistically sound data. Despite this shortcoming, cattle liveweights collected over a two-year period should provide a useful guide for research and will stimulate local interest. The liveweight gains achieved with liming were substantial, and may induce landholders with acid soils to look at liming their pastures.

Liveweight gains from the demonstration trial will continue to be taken in an effort to verify the results already presented, and establish an economic analysis to justify lime for grazed, acid-soil pastures. However, it is acknowledged that the economics of using lime, in times of low commodity prices may be questionable.

Acknowledgments

Funds to conduct this trial were provided by the Acid Soil Action program, an initiative of the NSW Government. The assistance of the Clonan family of "Cobrabald River", Glen Morrison in providing their records and liveweight gain measurements is gratefully acknowledged.