

Phosphorus and beef production in northern Australia.

Proceedings of an AMLRDC workshop held at Townsville in June 1988

This issue of Tropical Grasslands reports a rather novel approach to the analysis and presentation of a series of related grazing experiments. They were located at the CSIRO experimental stations at 'Manbulloo', near Katherine, Northern Territory; at 'Lansdown' near Townsville, north-east Queensland; at 'Narayan', near Mundubbera, south-east Queensland; and at the QDPI experimental site at 'Springmount', near Mareeba, north Queensland.

They were conceived and established as separate experiments. The experiments at Katherine, Lansdown and Narayan were set up with direct government funding, while that at Springmount received some support from the Australian Meat Research Committee. Subsequently, with the setting up of the Australian Meat and Livestock Research and Development Corporation (AMLRDC), to direct the expenditure of industry funds from October 1986, the experiments at Springmount and Narayan and a new experiment at Lansdown were partially funded by AMLRDC. At that stage the experiment at Katherine was almost completed.

One aim of the AMLRDC was to achieve better coordination of research between different research groups and organisations. An organisational framework was set up in which most of the AMLRDC funded research in northern Australia was brought under the umbrella of the North Australia Project (NAP). This in turn had three sub-Programs — Pasture Production, Animal Production and Animal and Pasture Management. The three AMLRDC funded experiments were grouped together as one project in the Pasture sub-Program with the title 'Mineral nutrition of legume-based cattle production systems in northern Australia' under the coordination of David Coates.

The first suggestion for coordination came from Ron McLean, which resulted in a visit from the Narayan group in May 1985 to view the experiments of David Coates at Lansdown and that of Joe Miller and Ron Hendricksen at Springmount. Subsequently a brief meeting was held at

Townsville in October, 1986, to inspect the research at Lansdown and to review research findings from the three AMLRDC funded experiments and the experiment that had just been concluded by Bill Winter at Katherine.

The results showed similarities in response to phosphorus, but differences in the degree of response and in the ability to diagnose phosphorus deficiency. There was insufficient time to fully evaluate the results or to come up with recommendations for the pastoral industry and future research. Hence it was suggested a workshop be held at which a full analysis of the results be presented. Joe Miller came up with the radical idea that we should together put all our results 'on the table' and request individuals to analyse and interpret different aspects of the work. AMLRDC agreed to fund the workshop.

Dr Barry Walker, Coordinator of the Pasture Production sub-Program of NAP, chaired a planning meeting in July 1987 and the workshop which was held in Townsville in June 1988. It was decided that besides presenting the results of the research on phosphorus requirements for grazing cattle, that earlier research should be reviewed and that the results should be open to scrutiny and debate by other researchers and extension workers.

The main papers presented at the workshop are reproduced in this issue of Tropical Grasslands. There has been considerable revision of the working papers, but the results presented are essentially those available up to the time of the workshop. The research has continued and will be finalised at a coordination meeting in June 1991. This includes an investigation of the efficiency of absorption of phosphorus by cattle under field conditions.

In addition to these published papers, several short papers were presented on the early results from demonstration trials using technology that arose from the research reported here. Information from these trials will be available in a booklet 'Developing and Managing Sown Pastures for the

Seasonally Dry Tropics' from the QDPI, Brisbane, Queensland in mid-1991.

The main priority for future research was considered to be 'the phosphorus requirements of breeders', together with research to improve the diagnosis of phosphorus deficiency and to map the phosphorus status of soils in northern Australia. A full economic evaluation of the

phosphorus technology options and the development of a decision support system, combined with further evaluation on properties, were also considered high priority issues.

All participants considered this a stimulating exercise and now invite you to assess the results!

P.C. Kerridge

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Katherine — L.R. Crabb, J.J. Hodgkinson

Springmount — L.D. Punter, C.D. Webb

Lansdown — M.R. Breen, R. Le Feuvre, L. Conlan

Narayan — G.A. Bunch, M.J. Elstob, G.K.W. Gericke, M.V. Mortison, B.R. Smith, R.B. Waite (now left CSIRO — J. Baker, H. Van Bennekom, P.J. Brooks, R.C. Flint)

At Lansdown, P. Gillard and R.J. Jones supervised the site survey and establishment of the experiment and P. Gillard was involved in the early conduct of the experiment.

At Narayan, the initial planning and establishment of the experiment was supervised by L.'t Mannetje; R.M. Jones carried out the demographic studies. D. Ratcliff provided statistical assistance.

Chemical analysis of plant samples was carried out by the Analytical Chemistry Group of the CSIRO Cunningham Laboratory and by the Agricultural Chemical Laboratory of QDPI.

The workshop was coordinated by B. Walker and local arrangements made by D.B. Coates. J.K. Leslie summarised the main points arising from the Workshop.

Workshop participants

AMLRDC — K.W. Entwistle, R.G. Holroyd, I.D. Johnsson, B. Walker, R.W. Wilson

CSIRO — D.B. Coates, J. Hogan, R.J. Jones, P.C. Kerridge, M. R. McCaskill, R.W. McLean, J.C. Wadsworth, W.H. Winter.

QDPI — P. Anning, A.J. Boorman, W.H. Burrows, M.A. Gilbert, R.E. Hendricksen, W.E. Holmes, J.K. Leslie, C.P. Miller, G.M. Murphy, M.F. Quirk, L. Winks.

N.T. Department of Primary Industries — T. Stockwell.

James Cook University — R. Heard, M. Murray.

University of Queensland — J.H. Ternouth, N.P. McMeniman.