

BEEFMAN: COMPUTER SYSTEMS FOR EVALUATING MANAGEMENT OPTIONS
FOR BEEF CATTLE IN NORTHERN AUSTRALIA

J.F. CLEWETT*, W. J. TAYLOR*, G.M. MCKEON", J.A. NEAL***, S.M. HOWDEN*,
P.D. YOUNG*, K.G. RICKERT** and R. WILSON

The objective of the BEEFMAN programme is to improve beef herd efficiency in Northern Australia by:

- (a) the development and evaluation of profitable herd management techniques and implementing pathways for research findings.
- (b) the development and evaluation of different pasture and forage systems, in relation to weather, soils and prices.

BEEFMAN is based on three computer systems: STATIC, HERD and PROBE.

(1) STATIC is a steady-state model of a beef cattle herd. The total herd size, expressed as adult equivalents, is held constant. The model calculates the equilibrium herd structure for given weaning and mortality rates, age of turnoff, and replacement policy. The model is being used by extension officers in Queensland, and has provided important insights into the sensitivity of herd production to mortality and reproductive rates (Taylor and Rudder 1986).

(2) HERD is a dynamic herd model which allows the changes in herd growth and decline to be simulated. HERD allows a user to describe a commercial herd or flock, etc., with 46 animal states. Animal states are used to describe the various groupings within the herd independently of age. The animal state name defines the animal groups by sex, and current and previous physiological status. The changes in animal states and ages are simulated on a monthly time-step. HERD provides a powerful and exact tool to examine the implications of herd management decisions and research findings.

(3) PROBE simulates pasture production and steer growth for different forage options: native pasture, sown grass pastures, legume/grass mixtures and forage crops (oats, sorghum and lablab). Different feeding systems for steer growth can be designed and tested encompassing 30 of years variation in weather and prices (McKeon et al. 1986). At Emerald in Central Queensland, PROBE is being tested on commercial properties to examine its validity and its capacity to provide advice for producers.

PROBE is supported by an on-line climate data bank for Queensland. Data from the Bureau of Meteorology and CSIRO (Division of Land Use Research) are available for use by extension officers. Demonstrations at field days have shown the demand for rainfall probability analysis within the grazing community.

The co-ordinated programme BEEFMAN for beef cattle management evaluation has been established by the Australian Meat and Livestock Research and Development Corporation. BEEFMAN is evaluating research findings in practical commercial terms and is intended to help producers make better decisions.

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* Queensland Department of Primary Industries, GPO Box 46, Brisbane, Qld, 4001

** Queensland Agricultural College, Gatton, Qld, 4343

*** 'Banana Station', Banana, Qld, 4702

**** 'Mangala', PO Box 1257, Rockhampton, Qld, 4700.