

A FIELD STUDY OF FACTORS AFFECTING REPRODUCTIVE RATES IN BEEF
CATTLE IN THE VICTORIA RIVER AND EAST KIMBERLEY REGIONS OF
NORTHERN AUSTRALIA

I.D. PERKINS,[†] C.J. MCCOOL,* G.A. JAYAWARDHANA,* S.G. WOLFE,*
T. OLM* AND M. SIMPSON*

Low reproductive rates have long been recognised as a major problem in extensive beef cattle herds in northern Australia (Andrews 1972,1976; Entwistle 1983). Andrews (1972,1976) identified and discussed the problem and underlying causes in the Victoria River District (VRD), as did Armstrong et al. (1968) for the East Kimberley region. These studies were conducted at a time when the proportion of *Bos indicus* blood in these regions was minimal. Since then, there has been widespread adoption of crossbreeding using *BosIndicus* herd bulls. This paper reports more recent observations on reproductive activity in a herd of mixed *Bos taurus*, *Bos indicus* and crossbred cattle in an area representative of both the VRD and the East Kimberleys.

Five thousand, five hundred and twenty-six females from 2 properties representing 23 separate herds were examined for age, pregnancy, lactation status and condition score (range 1-5) at the annual muster. Breed was determined from phenotype, and classified as pure *Bostaurus*, Brahman cross, or *Bos indicus*. Animals which appeared to have more than 75% *Bos indicus* blood were classified as *Bos indicus*. All heifers examined weighed over 280kg. Older females were randomly selected for examination. Table 1 summarises the data.

Table 1: Pregnancy rates and lactation rates by breed in a beef herd in the Victoria River District of the N.T. (wet \equiv lactating; dry \equiv non lactating)

Breed	% Pregnant & wet	% Pregnant & dry	% Empty & wet	% Empty & dry
<i>Bos taurus</i>	8.7	41.6	29.4	20.4
Crossbreds	12.6	44.4	29.2	13.8
<i>Bos indicus</i>	15.8	35.4	33.3	15.5

Data were examined by analysis of variance for the effects of breed, lactation status, condition score and age on pregnancy rates and overall reproductive activity. Pregnancy rates were significantly affected by breed, lactation status and cow condition score at time of pregnancy testing ($P < 0.001$ for each factor). Lactation status X breed interaction effects were significant ($P < 0.05$). Age effects were not.

Overall reproductive activity (the proportion of cows either pregnant or lactating or both) was lower in the *Bostaurus* animals ($P < 0.001$). It did not differ significantly between the crossbreds and the *Bos indicus* animals.

Introduction of *Bos indicus* genotypes into the VRD has had a positive influence on herd reproductive rates. Economic solutions to overcoming the nutritional constraints to improved herd reproductive rates in this environment have yet to be discovered.

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[†]GRM Consulting P/L, Watkins Place, Edward St., Brisbane 4000

*Berrimah Research Farm, PO Box 51, Berrimah N.T. 5788