

PREGNANCY RATES OF THREE ZEBU CROSS GENOTYPES
IN NORTHERN QUEENSLAND

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Three genotypes of cattle (F₂ generation 3/4 Brahman cross - BX; F₂ 3/4 Africander cross - AX; F₁ and F₂ 3/4 Sahiwal x 3/4 Africander - SX) are being compared for production traits in the subcoastal spear grass region of northern Queensland. Reciprocal crosses of the AX and BX lines have also been established and limited fertility data for this line is presented.

Management for the herd includes mating in late January - early February for 3 months, weaning at calf ages of 5-7 months, and pregnancy diagnosis 2-2½ months after the end of mating. Data on pregnancy rates and foetal ages were analysed by a least squares model in which breed, year, age and lactation effects and their interactions were examined. The analysis of pregnancy rates was carried out using logit transformation, and assuming binomially distributed errors, Table 1 summarises data for the five year period 1979-83.

TABLE 1 Least squares means for genotype, age and lactation effects on pregnancy rate and foetal age

	n	Pregnancy rate (%)	Foetal age (mth)
<u>Genotype</u>			
BX	207	57 ^{ab}	3.40 ^{ab}
AX	200	46 ^b	3.33 ^b
F ₁ SX	132	63 ^a	3.60 ^a
F ₂ SX	140	63 ^a	3.36 ^b
AX x BX	9	93 ^c	3.49 ^{ab}
<u>Age (yr)</u>			
3 (Heifer)	139	19 ^a	3.75 ^a
4	126	68 ^b	3.85 ^a
>5	423	82 ^c	4.09 ^b
<u>Lactation</u>			
Lactating	331	20 ^a	3.92 ^a
Non-lactating	357	87 ^b	4.55 ^b

Within each factor, means without a common superscript differ significantly (P<0.05).

Apart from the few AX x BX cows, pregnancy rates were highest in the SX lines, lowest in the AX line with the BX being intermediate. Foetal age (time of conception) followed a similar pattern, conception occurring earliest in the F₁ SX and latest in the AX line. There were no differences in fertility between cows mated to AX bulls and those mated to BX bulls in the reciprocal cross programme.

Between year variations in fertility were extremely wide (73, 66, 20, 86, 36% for years 1979-83 respectively) reflecting differences in severity of nutritional stress during the previous dry season. These nutritional stresses had a marked and significant effect in depressing fertility in heifers and in lactating cows which in turn reduced overall herd fertility.

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