

REPRODUCTIVE PERFORMANCE OF F₁ BRAHMAN-SHORTHORN AND
F₁ SAHIWAL-SHORTHORN CATTLE IN NORTHERN AUSTRALIA

R.G. HOLROYD* and P.K. O'ROURKE**

MATERIALS AND METHODS

At Swan's Lagoon Research Station in the subcoastal spear grass region of north Queensland, F₁ half Brahman-Shorthorn and F₁ half Sahiwal-Shorthorn calves born November to March in 1969-70, 1970-71 and 1971-72 were first mated at approximately two years of age. Each year mating commenced in January and continued for three to five months. The data were drawn from cows in a number of different mating groups on the property over the period 1972-1978. Cows were mated to bulls of the same breed, a total of 20 sires (eight purebred Brahman; 12 F₁ half Brahman-Shorthorn) being used in multiple sire mating programmes in the Brahman cross cows. The Sahiwal cross cows were single sire mated, except in 1978 when multiple sire mating was carried out, eight sires (five purebred Sahiwal; three F₁ half Sahiwal-Shorthorn) being used over the period of observations. Bull percentages for both cow genotypes varied from 2 to 5%. Apart from the mating period, the cow groups were run together. Calves were weaned about June each year, and the culling policy was similar for both breeds.

RESULTS AND DISCUSSION

There were no significant differences in conception rate, calving rate and weaning rate of Brahman cross and Sahiwal cross cattle (Table 2). However, the loss between pregnancy testing and weaning was 15.8% units in Sahiwals and 6.6% units in Brahman cross animals, most of the losses in the Sahiwals occurring in and perinatal and early postnatal periods. Between-sire differences in losses between pregnancy testing and weaning were not important in the Sahiwal single sire mating groups, while the use of multiple sire mating groups precluded any sire comparisons between Brahman cross and Sahiwal cross.

Lowest conception rates occurred in cows mated at three years of age. Similar trends occurred with calving and weaning rates. These results agree with McClure's review (1973) of Australian literature that fertility was highest in maiden heifers, lowest during their first lactation and that the level in mature cows approached that of heifers.

Age at mating did not influence the discrepancy between conception rates and weaning rates. This contrasts with previous work that higher losses occur in heifers than in mature cows (McClure 1973).

* Department of Primary Industries, "Swan's Lagoon", Millaroo, Qld 4807.

** Department of Primary Industries, Townsville, Qld 4810.

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TABLE 2 Conception, calving and weaning rates of Brahman cross and Sahiwal cross cows

	Cows mated		Conception rate (%)		Calving rate (%)		Weaning rate (%)	
	Lactating	All	Lactating	All	Lactating	All	Lactating	All
Breed								
Half Brahman	461	702	80.0	83.6	77.5	80.6	74.5	77.0
Half Sahiwal	292	462	83.0	84.7	78.1	79.5	67.3	68.9
SE			4.1	3.2	4.3	3.4	3.9	3.1
Age at mating (years)								
2		275		92.0		87.2		80.5
3	220	245	72.0	73.9	67.7	69.3	62.1	62.7
4	159	229	85.9	87.1	84.2	85.1	78.7	79.8
5	174	193	92.3	91.0	85.9	85.0	78.2	78.3
6	134	153	82.2	84.4	79.9	80.9	70.7	70.4
7†	66	69	75.2	76.5	71.2	72.8	64.8	65.9
SE			6.6	5.6	6.9	6.0	6.2	5.5

† This mating only for groups born 1969-70 and 1970-71.

Present work is investigating inter se mating of half and three quarter Brahman cross and Sahiwal cross animals to determine if the reported decline in fertility in F₂ and subsequent generations in half Brahmans (Seebeck 1973) occurs in the Sahiwal crossbreds.