

# Effects of Nutrition and Time of Weaning on Dry Season Liveweight Loss of Breeder Cows

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In the seasonally dry tropics of northern Australia, breeder cows may lose up to 30% liveweight during the dry season when pasture is of low nutritive value. This is a major cause of low reproductive rates and high mortality. Weaning early in the dry season is effective to reduce this liveweight loss of the breeder (Holroyd *et al.* 1988). An experiment examined the dry season liveweight loss of breeders for a range of weaning times and levels of nutrition.

From April to October through the dry season, 209 *Bos indicus* x Shorthorn cross cows 4-6 years of age grazed speargrass pastures in north Queensland. The cows had been joined with bulls from late January until April. Twenty-nine breeders had not suckled a calf during the previous wet season (DRY cows). In

addition 180 cows lactating in April were weaned in late April, mid July or early September. The cows were allocated by stratified randomisation based on lactational status, stage of pregnancy and body condition to 15 x 40 ha paddocks. Five paddocks with low fertility soils provided LOW nutrition, while 10 paddocks with medium fertility soils and no supplementation or with supplementation provided MEDIUM and HIGH nutrition, respectively. The supplement consisted of molasses containing 14% urea offered *ad libitum*. Liveweight was measured at intervals and conceptus-free liveweight (CF-LW) calculated. Data were analysed by AOV within groups of paddocks.

**Table 1.** Adjusted means of change (kg) in conceptus-free liveweight (CF-LW) of cows between late April and early September (n 9-10 for DRY, 19-21 for Month of weaning treatments)

Level of nutrition	No calf (DRY)	Month of weaning			Main effect means
		April	July	September	
HIGH nutrition	-11	+8	-23	-37	-15 <sup>x</sup>
MEDIUM nutrition	-20	-1	-34	-45	-25 <sup>y</sup>
Main effect means	-13 <sup>b</sup>	+4 <sup>a</sup>	-29 <sup>c</sup>	-41 <sup>d</sup>	
LOW nutrition	-56 <sup>b</sup>	-33 <sup>a</sup>	-60 <sup>b</sup>	-80 <sup>c</sup>	-57

Different superscripts within a column or row indicate that the means were different at  $P < 0.05$ .

The interaction between Level of nutrition and Month of weaning was not statistically significant ( $P > 0.05$ ).

Least significant differences ( $P < 0.05$ ) for Month of weaning between main effect means within MEDIUM and HIGH treatments was 9 and within LOW treatment was 13.

Mean CF-LW at the commencement of the experiment in late April of DRY cows and of lactating cows were 450 and 371 kg, respectively. The lactating cows had calved from November to January and in April the calves were 143 (s.d. 25) kg. Change in CF-LW from April to September differed ( $P < 0.001$ ) with supplementation. Means were -15, -25 and -57 kg for HIGH, MEDIUM and LOW respectively. On average cows which were not lactating in April (DRY) lost 29 kg while those weaned in April lost only 9 kg ( $P < 0.05$ ). However because the DRY cows were initially heavier than the lactating cows they were still 59 kg heavier than the April-weaned cows in September. On average, cows weaned in July lost 30 kg more, and cows weaned in September 45 kg more, than those weaned in April. There was no evidence for an interaction ( $P > 0.05$ ) between the Time of weaning and the Level of nutrition on cow CF-LW change. The reduction in breeder CF-LW loss due to weaning was 2.9 kg/week between April and July and 2.4 kg/week between April and September and was comparable with effects on breeder liveweight observed previously (Holroyd *et al.* 1988; Dixon 1998). The experiment demonstrated the major effect of weaning as a management strategy to conserve breeder body condition through the dry season and indicated that the

magnitude of the improvement on breeder body condition is likely to be similar for a wide range of pasture conditions.

Dixon, R. M. 1998. Improving cost-effectiveness of supplementation systems for breeder herds in northern Australia. Final Report, Project DAQ.098. Queensland Beef Industry Institute, Department of Primary Industries.  
Holroyd, R. G., G. W. J. Mason, I. D. Loxton, P. T. Knights and P. K. O'Rourke. 1988. Effects of weaning and supplementation on performance of Brahman cross cows and their progeny. *Aust. J. Exp. Agric. Anim. Husb.* 28:11.

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