

SYNCHRONISATION OF CALVING IN TWINNING BEEF COWS

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Twinning of beef cattle through embryo transfer has potential for increasing biological efficiency and profitability of cow/calf systems. However more intensive management may be necessary during calving of twin- as opposed to single-bearing cows, because of the requirement for more assistance at parturition to minimise calf mortality (Lambert *et al.* 1996). The on-farm practicality of intensive calving management for an extended period is doubtful. If spread of calving could be reduced, the high level of management input would be more acceptable to farmers. In this paper we describe work investigating the feasibility of synchronising calving of twinning cows.

Hereford x Friesian and Angus x Friesian beef cows, 79 single-bearing and 48 twin-bearing as a result of non-surgical transfer of two *in vitro* produced embryos, were calved at the AgResearch Ballantrae Research Station near Palmerston North in September 1994 and 1995. In 1996 thirty three single- and 16 twin-bearing cows calved, and in 1997 there were 28 single- and 14 twin-bearing cows. In these two years, half the single- and all the twin-bearing cows received a treatment designed to reduce calving spread (Bo *et al.* 1992). A long-acting corticosteroid (Opticortenol) was injected seven days before anticipated mean calving date (AMCD) at 1 mg/25 kg liveweight in 1996 and at 0.5 mg/25 kg in 1997 (average pre-calving liveweight: single-bearing 525 kg; twin-bearing 547 kg). Cows were injected one day before AMCD with a short-acting corticosteroid (Dexol-5) at 25 mg/cow and a prostaglandin (Estrumate) at 500 µg per cow.

Responses to synchronisation treatment were similar in 1996 and 1997 (Table 1). Average gestation length was shorter by six to seven days for singles, and by four days for twins (no data were available for non-synchronised twins in 1996 and 1997 so comparisons have been made with 1994 and 95 results). Synchronisation reduced spread of calving from 14 to 16 days to six to eight days in singles, and from 18 days to four to nine days in twins.

Table 1. Average gestation length (and range) in days for single- and twin-bearing cows with and without synchronisation treatments

	Single-bearing cows		Twin-bearing cows	
	Non-synchronised	Synchronised	Non-synchronised	Synchronised
1994 and 95	283 (268-292)		278 (270-287)	
1996	284 (275-290)	278 (274-279)		274 (271-279)
1997	284 (279-292)	276 (271-278)		274 (272-275)

In 1996 31% of twin-bearing cows calved before receiving Dexol/Estrumate, and only 36% of twinning cows calved on the targeted day. The Opticortenol dose rate was reduced in 1997, resulting in only 14% calving before receiving Dexol/Estrumate, and 64% calving on the targeted day. An even more compressed calving pattern might be obtained were Opticortenol to be completely omitted, however this might exacerbate the problem of retained placenta associated with twinning cows and cows induced to calve before term. Calf survival was not compromised by the synchronisation procedure as 100% of single calves and 91 to 100% of twin calves from synchronised cows survived.

The procedures adopted were successful in markedly reducing calving spread in both single- and twin-bearing cows.

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