

MILK PRODUCTION BY DAIRY CATTLE INJECTED WITH A SUSTAINED-RELEASE
BOVINE SOMATOTROPIN FORMULATION AT THREE INJECTION INTERVALS

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Daily injection of recombinantly derived bovine somatotropin has consistently increased milk production of dairy cattle (Peel and Bauman 1987). The acceptance of bovine somatotropin for use in commercial dairy herds would be enhanced by the development of a sustained-release vehicle necessitating less frequent injection. In South Australia, since most seasonally calving herds calve in the autumn prior to the availability of high quality pasture, it is appropriate to evaluate the use of bovine somatotropin when cows are in mid to late lactation and pasture is abundant.

Forty-four Holstein-Friesian cows and 22 heifers in the fourth to seventh month of lactation were allocated to groups of four based on similarity in calving date and milk fat yield recorded during a 28-day covariance period. Cattle within each group were allocated at random to receive either no injection or a subcutaneous injection of 320 mg of 'Somidobove' (Elanco Products Company, Wharf Road, West Ryde, NSW 2114) at intervals of either 28, 21 or 14 days. The cattle were strip grazed as a single group on perennial ryegrass/subterranean clover pasture and fed 2.5 kg daily of a 2:1 mixture of a barley/faba bean grain concentrate for an 84-day experimental period. Milk yield was recorded three times each week and milk composition, live weight and condition score once each week.

Table 1 Covariance-corrected mean daily yields of milk and milk components, milk composition, live weight and condition score of cattle injected with 'Somidobove'

	No injection	Injection interval (days)			s.e.d.
		28	21	14	
Milk yield (l)	15.9a	17.6b	18.1bc	18.8c	0.4
Fat content (g/kg)	43.3	42.4	44.1	43.2	0.6
Protein content (g/kg)	32.7a	32.6a	33.2b	32.6a	0.2
Fat yield (kg)	0.68a	0.73b	0.76c	0.80d	0.02
Protein yield (kg)	0.51a	0.56b	0.59c	0.61d	0.01
Live weight (kg)	540a	539a	549b	549b	4
Condition score	4.7ab	4.8b	4.6a	4.7ab	0.07

Means in the same row followed by different letters differ significantly ($P < 0.05$)

Cattle injected with 'Somidobove' at all injection intervals had significantly ($P < 0.01$) higher yields of milk, fat and protein than those not injected (Table 1). The patterns of milk and milk component yields were cyclic with maxima 2-3 days after injection. Heavier live weights of cattle injected at 21 and 14 day intervals were most likely due to greater gut fill as a result of higher pasture intakes.

Subcutaneous injection of bovine somatotropin as a sustained-release formulation was effective in increasing the yields of milk, fat and protein in autumn calving dairy cattle grazing pasture during spring and supplemented with a grain concentrate.

PEEL, C.J. and BAUMAN, D.E. (1987). J. Dairy Sci. 70:474.

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