

THE EVALUATION OF A BETA-AGONIST (CLENBUTEROL)
FOR INTENSIVELY MANAGED DAIRY COWS

J.B. MORAN*, T. STELMASIAK** and S. VAN MOURIK***

The partitioning of nutrients from body reserves to milk production during early lactation is an important contributor to high milk yields in dairy cows. In lotfed cows at Kyabram, marginal milk responses to grain feeding during early lactation diminished whereas body condition increased in diets where grain comprised 0, 0.16, 0.33 and 0.50 of the dry matter (DM) (Moran and Trigg 1989). Beta-agonists such as clenbuterol, act as repartitioning agents by reducing fat deposition in growing animals. The aim of this trial was to determine if lactating cows respond in a similar manner,

Ten Friesian cows (18 days post-partum) were fed *ad libitum* for 14 weeks on a complete diet (26 g N/kg DM, 0.76 *in vitro* DM digestibility) consisting of crushed wheat (0.40), maize silage (0.23), lucerne hay (0.20), cottonseed meal (0.15) plus minerals and sodium bicarbonate. During week 4, five of the cows were subcutaneously implanted with an osmotic pump that released 22.5 mg clenbuterol/day for 28 days. These cows were each implanted with a second osmotic pump during week 8. An osmotic pump continuously releases its contents through increases in pressure on a bladder inside the drug reservoir. The treated and control herds were fed separately from weeks 4 to 14 and individually during weeks 9-10 and 13-14. Daily intakes of DM and yields of milk and weekly changes in milk composition and live weight were monitored. Yields of fat corrected milk (FCM), milk fat and milk protein were covariate corrected prior to split-plot analyses of variance with sub-period (weeks 4-7 and 8-11) as the main plot and clenbuterol implant as the sub-plot. Data on liveweight changes, final live weights and individual DM intakes were also analyzed for treatment effects.

Table 1 Effect of clenbuterol on intake and productivity (kg/cow/day)

	Clenbuterol	Control	S.E.
DM intake	19.6	19.3	0.6
FCM yield	26.9	26.9	0.9
Fat yield	1.09	1.07	0.04
Protein yield	0.81	0.81	0.02
Liveweight change	0.18	-0.20	0.15
Final live weight	534	506	5.2

Final live weights differ ($P > 0.05$)

Clenbuterol had little influence on DM intake and partitioned feed energy towards body reserves rather than milk yields. Although, this may have indirect beneficial effects on herd fertility, its potential to improve the efficiency of milk production in lotfed cows is limited.

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* Kyabram Research Institute, Kyabram, Vic. 3620.

** Biocene International (Vic) Pty Ltd, Veterinary Precinct, VRI Building,
Park Drive, Parkville, Vic. 3052.

*** Australian Wool Corporation, Royal Parade, Parkville, Vic. 3052.