

## EFFECTS OF BODY CONDITION AND THE USE OF ANIONIC SALTS ON THE INTAKE OF DAIRY COWS IN LATE GESTATION

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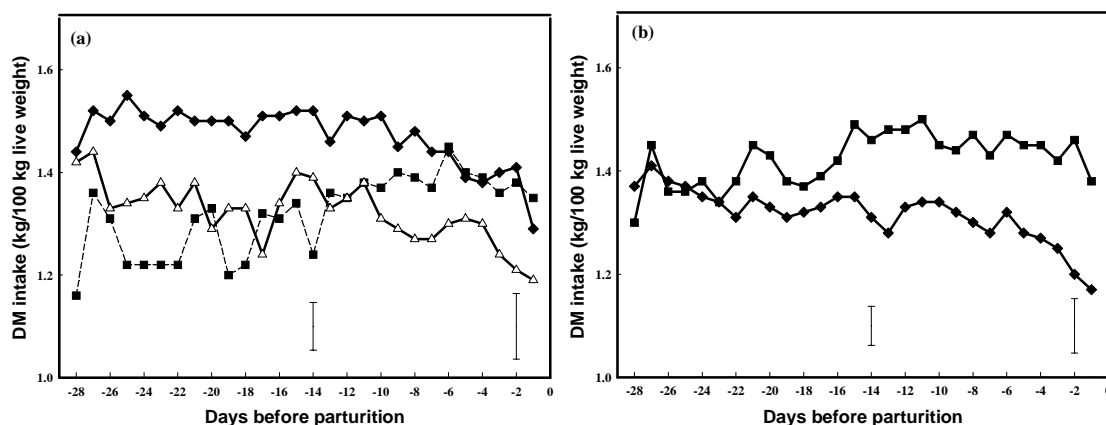
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Anionic salts are fed to dairy cows in late gestation to improve their calcium status at calving to reduce the risk of milk fever. However, most anionic salts are unpalatable. In an experiment conducted to investigate the interaction between body condition score (BCS) and the response of cows to the use of anionic salts ( $\text{MgSO}_4$ ), intakes of cows in the month before calving were monitored.

Seventy two cows with BCS of about 4, 5 or 6 on the 8-point scale of Earle (1976) were individually fed a total mixed ration consisting of maize silage, barley grain, barley straw and canola meal at 1.6% of live weight for about 4 weeks before expected calving date. Half the cows received 105-145 g (depending on live weight) of  $\text{MgSO}_4$ , commencing 7 days after a cow started individual feeding. The remaining cows were fed an average of 21 g of MgO to ensure that each cow consumed a diet with ~0.4% magnesium. Cows were fed once per day. Results of intakes for the last 14 and 2 days before calving were analysed by 2-way analysis of variance, with no blocking, using Genstat V.



**Figure 1.** Dry matter intakes of dairy cows in the month before parturition as influenced by (a) body condition score (BCS) (  $\square$  BCS 4;  $\blacklozenge$  BCS 5;  $\triangle$  BCS 6), and (b) the use of anionic salts (  $\square$  MgO;  $\blacklozenge$   $\text{MgSO}_4$ ). The vertical bars represent L.S.D.'s ( $P < 0.05$ ) for periods of 14 or 2 days before parturition.

For the last 2 weeks before calving, BCS 6 cows had lower intakes than BCS 5 cows (1.30 v. 1.44 kg DM/100 kg live weight), with the BCS 4 cows being intermediate (Figure 1a). In the final 2 days before calving, BCS 6 cows had the lowest intake (1.20 v. 1.36 and 1.35 kg DM/100 kg live weight) (Figure 1a). Intakes of cows that did not receive  $\text{MgSO}_4$  were maintained until the day before calving whereas those of cows fed the salts declined sharply from about a week before calving, but were always lower than the MgO group (Figure 1b).

This result, which clearly indicates that the fattest cows have lowest intakes immediately before calving, has only been recorded previously in cows in early lactation. Importantly,  $\text{MgSO}_4$ , which is regarded as the most palatable anionic salt (Oetzel and Barmore 1993), reduced DM intakes even though only 125 g of salts, on average, were included in a diet that should have been able to mask the taste of the salt. In addition, it was only when  $\text{MgSO}_4$  was included in the diet that the classical decline in intake before calving occurred. By not feeding  $\text{MgSO}_4$ , this decline in intake was avoided.

EARLE, D.F. (1976). *J. Agric. (Vic)* **74**, 228-31.

OETZEL, G.R. and BARMORE, J.A. (1993). *J. Dairy Sci.* **76**, 1617-23.

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