MILK YIELD RESPONSES OF GRAZING DAIRY COWS SUBJECTED TO LONG OR SHORT TERM SUPPLEMENTATION WITH CONCENTRATES

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It has been suggested that short term experiments do not give a full appreciation of the benefits of feeding concentrates. For example, in Queensland long term experiments have generally resulted in responses of 0.6 to 1.0 kg milk/kg concentrates, while in short term experiments of less than two months duration, responses of 0.3 to 0.6 kg/kg have been recorded (Davison and Elliott 1993). However, long and short term treatments have generally not been included in the same study so that conclusions can only be drawn by inference. An experiment at Kyabram tested the hypothesis that length of time under supplementation with concentrates will influence production responses in grazing dairy cows.

Forty cows grazed irrigated perennial pasture between October and March. Some of the cows were under treatment for six months, while others entered the experiment for short periods of only four weeks, during the second, fourth and sixth months. Cows in both cases were either unsupplemented, or were offered 5 kg DM of barley-based concentrates/day; all cows had a pasture allowance of about 40 kg DM/cow/day. There were two replicates, with five cows per treatment group. Milk yield was recorded daily and body condition scores were assessed each month.

The data show that it took a long time for differences between long and short term treatments to emerge (Figure 1). It was not until the sixth month that marginal returns in milk production from short and long term treatments diverged to any great degree (the s.e.d. from an analysis of variance was 0.67 kg milk/cow/day at this time). A major reason for this was that the condition score of the long term unsupplemented cows had dropped to 3.7 units compared with an average of 4.5 units for the pool of cows coming into treatment in the last month. Therefore, it was not that the supplemented cows under the two feeding regimes performed any differently, rather the superior body condition of the short term unsupplemented cows enabled them to maintain higher milk production levels than the long term unsupplemented cows. While this result is in agreement with the conclusions of Davison and Elliott (1993) and highlights the importance of better body condition for higher milk responses, it cannot be extrapolated to a situation where cows might have come into treatment in poorer body condition.