EFFECTS OF PROTEIN MEAL SUPPLEMENTS ON THE CALVES OF COWS OF DIFFERENT GENOTYPES GRAZING SUBTROPICAL PASTURES

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Profitability in a beef enterprise, aimed at producing weaner calves for the feeder markets, depends on the number and quality of calves sold each year (R.J. Farquharson pers. comm.). A 3-year, Meat Research Corporation-supported study at Grafton, New South Wales aims at assessing supplementation strategies for improving the fertility of cows of 3 genotypes. During the study we have observed that calves from supplemented cows appeared to be in a better “condition” at weaning than calves from unsupplemented cows. This paper examines data from 1993 as to whether calves weaned from the supplemented cows were heavier, with a higher post weaning growth rate, than those from unsupplemented ones.

Cows of Hereford (H), Brahman x Hereford (BH) and Brahman (B) genotypes were allocated to 36 paddocks (6/cell) representing low or medium quality subtropical pastures. The low quality pasture had a 12-month mean total yield of 4500 kg dry matter/ha and a digestibility range from 45-55%; cows were stocked at 2.5 ha/cow. The medium quality pasture (yield 5200 kg/ha; digestibility range from 49-60%) was stocked at 1.6 ha/cow. Cows were offered supplementary protein as cottonseed meal (CSM), during a 130-day period from calving until part way through a mating period. The CSM was fed twice-a-week, at rates equivalent to 0, 750 and 1500 g/cow.day. Breed types were combined into feeding groups for the mating period of 15 weeks. Calving commenced in August with calves weaned on a common day in early April, at approximately 200 days of age.

Within pasture types there was no significant effect of supplementation on calf growth from birth to weaning within any genotype. However, weaners from B and BH cross cows grew faster than weaners from H cows and this was significant (P < 0.01) for those on medium quality pastures (Table 1). There was a trend (P < 0.1) for the weaners to be heavier from cows supplemented with CSM on the low quality pasture. The difference was significant (P < 0.05) for weaners from H cows. Weaners from these cows were also older (P < 0.06) at weaning with weight and age being correlated (r = 0.49). On the medium quality pasture the effect of supplementation of cows on weaner liveweight was small, and not significant, although weight and age again were correlated (r = 0.92).

Table 1. Growth of calves from birth to weaning (g/day) from cows of different genotypes grazing either a low or medium quality pasture

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Hereford</th>
<th>Brahman x Hereford</th>
<th>Brahman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture -low</td>
<td>680 (53.0) a</td>
<td>840 (57.9) a</td>
<td>850 (60.1) a</td>
</tr>
<tr>
<td>-medium</td>
<td>805 (14.6) a</td>
<td>910 (30.3) b</td>
<td>920 (37.1) b</td>
</tr>
</tbody>
</table>

Means within rows with unlike superscripts differ (P < 0.01).
Values in parentheses are s.e.

The major effect of the supplement was on the cow, reducing the intercalving interval. Because of this direct effect, H cows produced older calves at weaning which were heavier. There was no significant direct effect of CSM on calf growth nor presumably indirectly on the calf through a greater milk intake from a supplemented dam.