EFFECTS OF MONENSIN SODIUM AND AVOPARCIN ON THE LIVESTOCK GAIN OF STEERS DURING THE NORTH QUEENSLAND WET SEASON

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It has been amply demonstrated in temperate countries that the rumen modifiers monensin and avoparcin will stimulate growth of beef cattle when fed at pasture. The present Australian study examined the effect of supplementing growing cattle with either monensin or avoparcin during the tropical wet season in north Queensland. Responses to implanting with oestradiol 17β were also measured.

Fifty-four Bos indicus crossbred steers were randomly allocated to one of nine paddocks to give three replicates of three treatments. The treatments were: no additive (NP); 320 mg/d monensin sodium via a controlled release bolus (MON) and 200 mg/d avoparcin as a solution in the drinking water (AVP). Half of the animals in each treatment also received 24 mg of oestradiol 17β as a long acting ear implant. The steers grazed unfertilized native pastures (predominantly Heteropogon contortus) at the rate of 0.3 animals/ha for 195 days.

Table 1 Mean liveweight gain (LWG) of steers given one of two rumen modifiers plus oestradiol 17β and grazed for 195 days

<table>
<thead>
<tr>
<th>Oestradiol 17β</th>
<th>Rumen modifier treatment</th>
<th>Avoparcin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Monensin</td>
<td>- +</td>
<td>- +</td>
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Initial live weight (kg) 180 183 179 180 181 180
LWG (kg/d) 0.47\textsuperscript{a} 0.54\textsuperscript{b} 0.46\textsuperscript{a} 0.53\textsuperscript{b} 0.46\textsuperscript{a} 0.48\textsuperscript{a}

\# Means with dissimilar superscripts are significantly different (P<0.05)

The experiment was conducted during the northern wet season from December 1988 and the control (NP) animals gained at 0.47 kg/d. There was a significant increase (P<0.05) of 15% in liveweight gain (LWG) when the oestradiol 17β implant was administered to the NP and MON animals. However, there was no response to oestradiol 17β with the AVP group. Similarly, giving monensin and avoparcin did not significantly increase LWG. The response in LWG when oestradiol 17β is given to growing animals is well documented. The lack of response to MON and AVP may be due to the high dose rate and some breakdown in the water respectively. Other work suggests that monensin will improve LWG at about 100 to 180 mg/d (Watson and Laby 1978) and that avoparcin will stimulate growth when fed using cottonseed meal as a carrier (Lindsay, unpublished). However, it is clear that the simplest and most economical way to boost wet season LWG is to implant with oestradiol 17β or a similar substance.


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