POTENTIAL OF GROWTH HORMONE AS A GROWTH PROMOTANT IN YOUNG GRASSING CATTLE

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Growth hormone (GH) has the potential to increase growth rates (Evans and Simpson 1931) and to produce leaner carcasses (Wagner and Veenhuizen 1978) in mature, fully-fed animals. Its effects in immature animals have been variable (Muir et al. 1983). This experiment was designed to examine the effect of GH on growth and body composition of immature grazing animals.

One member of each of 12 sets of identical twin dairy heifers (3.5 +/- 1 months of age) was injected with 0.6 mg GH/kg liveweight daily for 21 weeks; co-twins received placebo injections. When treatment ceased, four twin sets were slaughtered and carcass compositions established.

Daily GH administration produced a 7.6% increase (P<0.01) in growth rate which resulted in a 6.1 kg increase (P<0.01) in liveweight and a 4.9 kg increase (P<0.05) in carcass weight. There was no change in carcass water or protein content due to treatment but GH produced a 17.5% (ns) decrease in carcass fat. Growth rate declined when GH treatment was withdrawn and by five weeks after treatment there was no difference in liveweight. This experiment indicates that GH has only a small effect on growth and carcass composition in immature animals.


COMPARISON OF MOLASSES, MOLASSES/MONENSIN AND MAIZE AS SUPPLEMENTS FOR CATTLE FED SPEARGRASS

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A study was made to determine whether the reputedly poor nutritional value of molasses compared with maize (Karalazo and Swan 1976) could be overcome by supplementation with monensin. Twelve steers (182 +/- 9 kg), fed spear grass ad libitum, were randomly allocated to 3 treatments; (1) 0.74 kg DM molasses, (2) treatment (1) plus 150 mg monensin and (3) 0.64 kg DM maize. All treatments were made isonitrogenous with urea. The steers were maintained in single pens for 70 days, bled and rumen sampled, then placed in metabolism crates for a 14 day adjustment and an 8 day faecal collection period. For the 70-day period, empty body weight changes after overnight fasting were -1.5, -0.5 and -5.5 kg respectively. For the combined treatments, mean roughage intake was 3.4 kgDM/day, organic matter digestibility 35%, rumen N (NH3) 43 mg/l, total volatile fatty acids 39.2 mM/l and plasma N was 77 mg/l. Monensin increased but the maize supplement lowered the proportion of rumen propionate (P<0.05). The greater weight losses with the maize supplement were probably related to low sulphur content as serum inorganic sulphur levels 5.9 mg/l for maize were significantly lower (P<0.05) than 20.4 mg/l for the molasses treatments. Results indicate that molasses with or without monensin is a superior supplement to maize for cattle on a basal diet of poor quality spear grass.

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