

# INFREQUENT FEEDING OF SORGHUM GRAIN SUPPLEMENTS TO BEEF CATTLE USING VIRGINIAMYCIN AS AN ADDITIVE

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It has been recognised that one of the roles for virginiamycin is to reduce the risk of acidosis when grain rations are fed infrequently (Zorilla-Rios *et al.* 1991). This experiment was designed to test this role under dry tropical conditions with very low quality roughage as a basal diet.

A pen study was conducted using thirty-six 160 kg weaner steers (Brahman crossbred) with 12 animals per treatment. The basal diet of native pasture hay (0.4%N 45% DMD) was offered *ad libitum*. A supplement containing 80% crushed sorghum plus minerals, vitamins, 1% urea and 16% protein meal was fed at 0.5 kg per day or 3.5 kg once per week. Gromycin® (containing 20 g/kg virginiamycin) was added directly to the mixture to give 100 mg virginiamycin (VM) per day (daily) or 200 mg VM per week (weekly). The level was chosen to ensure sufficient activity per day as a rumen modifier and to minimise acidosis. Feed intake and liveweight gain (LWG) were measured over 72 days.

The grain mix was introduced abruptly to the 2 daily fed groups and the weekly fed group was fed 0.5 kg mix per day for 4 days and then 3.5 kg weekly thereafter. There were no signs of ill-health in any of the steers.

**Table 1. Liveweight gain (LWG, kg/day) and feed intake (kg/day) when weaner steers were supplemented daily or weekly with a mix containing virginiamycin (VM)**

Treatment	Feed frequency	VM (mg/feed)	LWG	Hay intake
0.5 kg sorghum mix	Daily	0	0.14 <sup>a</sup>	2.03 <sup>a</sup>
0.5 kg sorghum mix + VM	Daily	100	0.26 <sup>b</sup>	2.09 <sup>a</sup>
3.5 kg sorghum mix + VM	Weekly	200	0.02 <sup>c</sup>	1.75 <sup>b</sup>
SEM			0.04	0.10

Within column and experiment values followed by different letters are significantly different at P=0.05.

The results show that the addition of virginiamycin (VM) to the grain mix at the rate of 100 mg per head per day increased LWG by 86% compared with no VM. The animals which were fed weekly grew at 0.2 kg/day less. The VM was acting as a growth promoter when fed daily but at the higher level (200 mg in 1 feed) used in weekly feeding hay intake was depressed and growth rate was reduced.

These results show that virginiamycin is an effective rumen modifier when fed daily. The addition of VM will allow weekly feeding of grain based supplements without any ill-health to the cattle. However, the level chosen in this experiment (57 mg VM per kg grain mix) caused a depression in hay intake and hence depressed performance.

The Meat Research Corporation provided partial support for this work under Project DAQ.065.

ZORILLA-RIOS, J., MAY, P.J. and ROWE, J.B. (1991). Recent Advances in Animal Nutrition in Australia (Ed D.J. Farrell) 10A. (University of New England Publishing Unit: Armidale).

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