SEASONAL EFFECTS OF DOSING CATTLE WITH MONENSIN SODIUM IN THE DRY TROPICS

J.A. LINDSAY*, L.C.L. FREIRE**, R.M. MURRAY** and M.A. TOLEMAN***

Monensin sodium is one of the few products available which will successfully manipulate rumen fermentation over an extended period of time. This experiment studied the metabolic effect of dosing cattle with monensin sodium during the dry and wet seasons in the dry tropics.

Six Brahman crossbred steers prepared with rumen fistulae were grazed on an unfertilized tropical pasture consisting of predominantly Heteropogon contortus with some Stylosanthes humilis. Three of the animals were dosed with 250 mg monensin sodium daily. Faecal output was estimated using a continuous infusion of Cr-EDTA marker from a back-pack pump (Siebert et al. 1978). Three similar steers were prepared with oesophageal fistulae to estimate diet selection parameters. The animals were observed in the dry season (October 1979) and in the wet season (April 1980).

TABLE 1 Effect of monensin sodium on concentration and proportions of volatile fatty acids (VFA) in the rumen fluid of cattle grazing tropical pastures

	Dry season			Wet season		
	Control	Monensin	SE of mean	Control	Monensin	SE of mean
Total VFA (m mol/l)	72.4	68.1	7.2	92.4	96.2	4.5
VFA molar proportions						
Acetate	77	72	1.2	71	69	0.9
Propionate	16[a†]	21[b]	0.7	15[a]	20[b]	0.7
Butyrate	7	5	0.6	12[a]	9[b]	0.3
Valerate	0	2	0.2	2	2	0.03

† Means with dissimilar superscripts are significantly different ($P < 0.05$) within seasons.

Monensin appeared to influence only the VFA proportions. There were no significant within season effects on the other parameters measured. In the dry season the cattle consumed a diet of 58% dry stem compared with 74% green leaf in the wet season. Because of this the organic matter (OM) digestibility of oesophageal extrusa fell sharply in the dry season. The calculated OM intake was 2.7 kg/day in the dry season and 6.1 kg/day in the wet season,

These results indicate that the dosing of grazing cattle with monensin will alter rumen fermentation patterns without any apparent effect on feed intake. The significance of this finding in terms of growth rate has yet to be ascertained.

SIEBERT, B.D., ROMERO, V.A., HUNTER, R.A., MEGARRITY, R.G., LYNCH, J.J., GLASGOW, J.D. and BREEN, M.J. (1978). Aust. J. Agric. Res. 29: 631.

* Department of Primary Industries, Swan's Lagoon, Millaroo, Qld 4807.
** Department of Tropical Veterinary Science, James Cook University, Townsville, Qld 4811.
*** Department of Primary Industries, P.O. Box 1085, Townsville, Qld 4810.