

## THE EFFECT OF IONOPHORIC FEED ADDITIVES ON FEED CONVERSION EFFICIENCY IN SHEEP

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The ionophoric feed additives, monensin, narasin and salinomycin, have been included in diets to improve feed conversion efficiency in cattle. Although narasin and salinomycin are structurally very similar, addition of narasin resulted in a large (16%) decrease in feed intake whereas salinomycin resulted in a marked (12%) increase in liveweight gain in cattle at feedlot in the USA (Wagner 1984). While the effects of ionophores on cattle in the USA are well known, there is little published information on the effects of ionophore addition on feed intake and liveweight gain in sheep in Australia.

Twenty merino wethers, of mean liveweight  $31.2 \pm 0.2$  kg and nine months of age, were allocated to one of four treatment groups; control, monensin, narasin or salinomycin. Each sheep was individually penned in a animal house and fed once per day on a ration mixture of 400g of oaten chaff and 500g of pellets (30% lucerne hay, 16% lupin meal, 30% oats and 14% wheat) which provided 88 g of protein and 8.2 MJ of ME per day. The sheep were dosed with their respective ionophores (contained within a gelatin capsule) once per day at the time of feeding. Feed intake was monitored daily for 48 days and live weights recorded weekly.

The results shown below are means  $\pm$  SEMs for five animals per treatment group.

	Control	Treatment Group		
		Salinomycin	Monensin	Narasin
Initial Weight (kg)	$31.1 \pm 1.2$	$31.2 \pm 0.4$	$31.2 \pm 0.5$	$31.3 \pm 0.1$
Final Weight (kg)	$35.3 \pm 1.1$	$36.1 \pm 0.8$	$36.0 \pm 0.4$	$36.4 \pm 0.3$
Ionophore Dose		15 ppm	10 ppm	10 ppm
Mean Daily Feed Intake	$900 \pm 0$	$895 \pm 4$	$865 \pm 21.6$	$899 \pm 1.1$
Mean Gain in 48 Days (kg)	$4.2 \pm 0.6$	$4.9 \pm 0.4$	$4.9 \pm 0.4$	$5.1 \pm 0.3$
Mean Daily Gain (g)	$88 \pm 12.1$	$102 \pm 8.1$	$102 \pm 8.8$	$106 \pm 5.2$
Feed:Gain Ratio	$10.2 \pm 0$	$9.0 \pm 0.8$	$8.7 \pm 0.6$	$8.5 \pm 0.4$
Increased Feed Conversion Efficiency (% of Control)		+ 11.8	+ 14.7	+ 16.7

All three ionophores significantly ( $P < 0.01$ ) increased the efficiency of liveweight gain for sheep on this ration mixture. Narasin did not decrease feed intake in these sheep and in fact provided the greatest increase in feed conversion efficiency of the three ionophores through a significant ( $P < 0.01$ ) increase in liveweight gain.

WAGNER, D. (1984). *The Bovine Practitioner* 19: 151.