THE INFLUENCE OF THE RUMEN FERMENTATION MODIFIERS MONENSIN AND NARASIN ON LIVEWEIGHT GAIN AND WOOL PRODUCTION IN MERINO SHEEP

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Rumen fermentation modifiers such as monensin have been used extensively in the cattle industry to improve liveweight gain and feed conversion efficiency and also in the poultry and sheep industries as a coccidiostat. Narasin is an ionophore with similar physical and chemical characteristics to monensin and affects the animal in a similar manner. This trial examined the affect of monensin and narasin on liveweight gain, the efficiency of conversion of feed into wool, wool growth, staple length growth, mean fibre diameter and clean fleece yield in sheep.

Twenty Merino ewes (27.9 ± 1.03 kg), approximately two years old, were placed in individual pens in which they received the treatments in a randomised complete block design (five sheep per treatment). The sheep were fed lucerne chaff (18% protein on a DM basis) at 2.5% (32 days) and then 3% (14 days) of each animal's liveweight. Monensin and narasin, 10 mg per day, were mixed into the feeds immediately prior to feeding. One group of sheep were fed 30g/d fishmeal, mixed into the chaff, as a positive control. A mid-side patch (approximately 100 cm^2), and a dye band were used to measure wool growth.

Table 1. The effect of monensin and narasin supplementation on liveweight gain and wool production of Merino sheep

Treatment	Liveweight gain (g/d)	Clean wool growth ($mg/cm^2/d$)	Yield (%)	Staple length (mm)	Mean fibre diameter (microns)	Feed conversion efficiency (g feed/g wool)
Control (-)	21^{b}	1.09^{ab}	78.2^{a}	7.6	17.6	90^{ab}
Control (+)	50^{a}	1.16^{b}	73.8^{ab}	8.0	18.4	84^{a}
Monensin	44^{ac}	0.97^{a}	71.4^{b}	8.2	18.3	101^{b}
Narasin	26^{bc}	1.00^{ab}	72.9^{ab}	7.9	18.0	96^{ab}

Means in the same column with different superscripts are significantly different ($P < 0.05$).

Supplementation with monensin increased ($P = 0.014$) the liveweight gain of the sheep. The addition of monensin and narasin to the diet had no significant effect ($P > 0.05$) on clean wool growth, staple length, mean fibre diameter or clean fleece yield. The study has confirmed that monensin is capable of increasing liveweight gains in sheep under these nutritional conditions.