

EVALUATION OF THE FEED ADDITIVES FLAVOMYCIN AND M139603 FOR INCREASING LIVELWEIGHT GAINS AND WOOL PRODUCTION

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Feed additives such as ionophores and antibiotics are commonly used in ruminant diets to improve liveweight gain and feed conversion efficiency. Ionophores can increase the supply of energy available by modifying rumen fermentation patterns. They may also increase protein availability to the animal by decreasing degradation of dietary protein in the rumen (Chalupa 1984). Antibiotics can increase absorption of amino acids from the intestines (Armstrong 1984). This experiment investigated whether an ionophore (M139603) and an antibiotic (flavomycin) could increase wool growth in sheep fed diets of different energy and protein levels ad libitum.

Merino wethers 9 months of age and with an initial liveweight of 28.9 kg (SE 0.2) were fed either wheat chaff or a pelleted mixture of lucerne, lupins and barley (6:2.5:1.5). Animals were individually fed either the control diets with no additives (n = 30) or the diets containing additives (n = 15) at the following levels: flavomycin (F) 10, 20 mg/kg feed; M139603 (M) 5, 10 mg/kg. Feed intake and liveweight were measured over an 8 week period, and wool production measured by clipping midside patches over 2 consecutive 4 week periods.

Additive (mg/kg feed)	Liveweight gain (g/d)		Clean wool growth (g/m ² /d)		Fibre diameter (μ)	
	Chaff	Pellets	Chaff	Pellets	Chaff	Pellets
Controls	89	291	5.81	11.5	18.7	24.9
Flavomycin (10)	95	323	5.82	12.3	18.6	25.1
Flavomycin (20)	102	324	6.25	13.7*	17.6	24.9
M139603 (5)	93	334*	6.34	13.5*	19.1	25.7
M139603 (10)	64	321	5.57	12.6	18.1	25.0
SED	12	15	0.4	0.5	0.5	0.6

SED - standard error of difference (control vs treatment groups).

* - $P < 0.05$ (control vs treatment groups).

Intake of the two diets was not significantly affected by inclusion of either additive: mean values (g/d) for chaff were 896, 908, 903 (SED 27), and for pellets were 1615, 1696, 1647 (SED 39), for controls, F and M respectively. For animals eating pellets, liveweight gains were increased with both F and M inclusion, by 11 and 12% respectively ($P < 0.05$), resulting in an improvement in feed conversion efficiency when the additives were included (means 6.35, 5.53, 5.36 kg feed/kg liveweight gain for controls, F and M respectively, $P < 0.05$). Clean wool growth was also increased, by 12 and 13% respectively, for animals receiving the pelleted diet ($P < 0.05$). There was no effect of either additive in sheep receiving the chaff diet. Fibre diameter did not change significantly on either diet when the additives were included.

This experiment indicates that both flavomycin and M139603 can improve liveweight gains, feed conversion efficiencies and wool growth in rapidly growing sheep.

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