

VIRGINIAMYCIN REDUCES TENDER WOOL IN SHEEP SUPPLEMENTED WITH
CEREAL GRAIN.

P. J. Murray* and J. B. Rowe**

Lactic acid production during rumen fermentation of carbohydrate can be a serious problem during supplementary feeding of sheep. The disruption to digestion and metabolism may lead to a reduction in wool strength. Virginiamycin (VM) is a feed additive that prevents lactic acid build up during the fermentation of starch and soluble carbohydrate (Nagaraja *et al.* 1987). This experiment examined the effect of VM on wool strength following experimentally induced acidosis in sheep.

There were 4 treatments (n=6) in a factorial design: \pm a drench of ground wheat (800g) and \pm treatment with VM (0.2 g of VM as 10g Stafac 20, SmithKline Animal Health Australia). These treatments were administered as water-based slurries via a rumen tube. Rumen samples were taken for measurement of pH and L-lactic acid concentration 24 hours following drenching with wheat grain.

TABLE 1. The effect of VM and ground wheat on wool strength (N/Ktex), rumen pH and lactic acid concentration (mmol/L) 24 h after administration of ground wheat. Values are given as: mean \pm standard error.

Treatment	Wool strength	24 h pH	24 h Lactate
Control	31.0 \pm 2.6	7.04 \pm 0.02 ^b	0.70 \pm 0.13
Cont. VM	32.2 \pm 2.4	7.16 \pm 0.08 ^b	1.52 \pm 0.67
Wheat	24.3 \pm 4.2	6.10 \pm 0.14 ^a	7.73 \pm 5.50
Wheat & VM	30.0 \pm 2.8	6.19 \pm 0.18 ^a	2.07 \pm 0.36

Values with different superscripts in the same column are significantly different (P<0.05)

The sheep given ground wheat without VM had tender wool as defined by the AWC (<30 N/Ktex) whereas all other treatments had wool strengths 30 N/Ktex or greater. There were reductions in rumen pH and feed intake associated with the ground wheat drench irrespective of the VM treatment. The effect on wool strength appears to have been through factors other than rumen acidity or feed intake. It is possible that wool strength in sheep fed high levels of carbohydrate is affected by rumen lactate concentration although the biological pathway for this effect is not understood.

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* Sheep and Wool Branch, and **Beef Cattle Branch, Western Australian Department of Agriculture, Baron-Hay Court, South Perth, W. A. 6151