

EFFECTS OF N-HYDROXYMETHYL-DL-METHIONINE-Ca  
SUPPLEMENTATION ON WOOL CHARACTERISTICS OF MERINO SHEEP

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A commercial methionine analogue, N-hydroxymethyl-DL-methionine-Ca (Mepron) has been reported to be effective as a supplement for wool growth (Wuliji and McManus 1987). This paper discusses aspects of its effects on wool characteristics.

Twenty-four yearling Merino wethers (28 kg) were assigned to three groups, a control and two Mepron treatment levels in a randomised complete block design. The sheep, housed in individual pens, were fed 805 g alkali-treated pellets daily on a dry matter basis. The pellets contained 20% sugar-cane bagasse, 15% oat hull, 8% oat hay, 15% whole cotton seed, 10% lupin, 15% barley, 12.5% oats, 0.5% mineral mix; 4% NaOH was applied to the roughage components before pelleting. The trial was conducted over three consecutive time periods: initial control period (ICP), methionine supplementation period (MSP), and final control period (FCP) respectively of 5, 8, and 5 weeks. During the MSP, groups received 0 g, 4 g, and 8 g Mepron (67.7% DL-methionine) in addition to their daily basal diet. Wool growth was determined using dyebanding and harvesting of midside wool patches (Langlands and Wheeler 1968). Fibre diameter was measured by an FFD-analyser (Information Electronics Ltd., Canberra) on cutting of successive 2 mm sections of dyeband staples. Clean wool sulphur content was determined by a sulphur determinator (Leco Co., USA). The values of ICP were used for covariate adjustment to MSP and FCP data.

The Mepron consumption was 3.86 g/d, 7.60 g/d and giving an intake of 2.61 g/d and 5.14 g/d DL-methionine respectively. Clean wool growth, staple length, fibre diameter were significantly increased by both levels of Mepron. However, sulphur content of clean wool was increased significantly only at the high level of Mepron supplement (table 1). None of the wool characteristics was significantly different in FCP. While there were positive changes in wool characteristics using Mepron, wool growth responses were marginally less than obtained with anabomasally infused equivalent amount of amino acids (Reis 1979), indicating that the product is partially resistant to rumen degradation.

Table 1 Clean wool growth and wool characteristics in Methionine supplementation period (means  $\pm$  SE)

Group	Sheep (n)	Clean wool (mg/cm <sup>2</sup> /d)	Fibre diameter ( $\mu$ m)	Staple length (mm/d)	Sulphur content (%)
Control	8	0.65 <sup>a</sup> $\pm$ 0.02	20.2 <sup>a</sup> $\pm$ 0.2	0.276 <sup>a</sup> $\pm$ 0.003	2.95 <sup>a</sup> 0.03
Mepron 1	8	0.75 <sup>b**</sup> 0.02	20.8 <sup>b**</sup> 0.2	0.297 <sup>b***</sup> 0.003	3.07 <sup>ab</sup> 0.03
Mepron 2	8	0.79 <sup>b***</sup> 0.02	21.1 <sup>b*</sup> 0.2	0.301 <sup>b***</sup> 0.003	3.08 <sup>b**</sup> 0.03

Data bearing same superscripts are not significantly different;

\* =  $p < 0.05$ , \*\* =  $p < 0.01$ , \*\*\* =  $p < 0.001$ .

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