

# Effect of supplementation with either press extracted canola meal or lupins on liveweight gain and linear wool growth in Merino weaners grazing cereal stubble

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Cereal crop stubbles are widely used in Western Australia as a basal feed during late summer and autumn. However, sheep will lose weight if supplementary feeding is not carried out in conjunction with grazing these stubbles (Rowe and Ferguson, 1986). This weight loss can be attributed to the low digestibility and protein and energy contents of the cereal stubble (Leng, 1992).

In this study five groups of twenty wether weaners grazed 2.2 ha plots of oat stubble. The supplementary feeding treatments were [1] Control-no supplement; [2] 100 g/hd/d lupins (5.6 g N/d, 1.3 MJ ME/d); [3] 150 g/hd/d lupins (9.1 g N/d, 1.9 MJ ME/d); [4] 50 g/hd/d canola meal (2.5 g N/d, 0.6 MJ ME/d); and [5] 100 g/hd/d canola meal (5.0 g N/d, 1.2 MJ ME/d). Respective supplements were fed out twice weekly for 12 weeks. Liveweight gain and linear wool growth (using dyebands) were measured over the feeding period.

Sheep in all the supplemented groups were heavier than those in the control group by the end of the feeding period. Total liveweight gain increased ( $P<0.05$ ) as the level of supplementation increased for lupins, however, there was no significant difference in total liveweight gain between the two levels of feeding of the canola meal supplement.

Linear wool growth during the period of supplementation was not significantly different between the control group and the group receiving the low level of lupin supplementation. However, linear wool growth

was greater ( $P<0.05$ ) in the groups receiving the canola meal and the high level of lupin supplements.

When based on supplemental N and energy intake, there was no direct relationship between supplement intake and liveweight gain and linear wool growth. The lupin protein is largely degraded in the rumen (Hume, 1974), however, the extent of degradability of the protein in press extracted canola meal is not known. Results from this trial suggest that some of the protein contained in press extracted canola meal by-passes the rumen for absorption in the small intestines. This would explain why sheep fed 50 g/d canola meal (2.5 g N/d) gained the same amount of weight and grew the same amount of wool as sheep fed 100 g/d lupins (5.6 g N/d).

## References

- Hume, I.D. (1974). The proportion of dietary protein escaping degradation in the rumen of sheep fed on various protein concentrates. *Australian Journal of Agricultural Research*, 25, 155-165.
- Leng, R.A. (1992). *Drought Feeding Strategies: Theories & Practice*. Penambul Books: Armidale.
- Rowe, J.B. and Ferguson, J. (1986). Lupin grain as a supplement to sheep grazing cereal stubble. *Proceedings of the Australian Society of Animal Production* 16, 343-346.

**Table 1** The effect of supplementation with either lupins or canola meal on liveweight gain and linear wool growth of wether weaners grazing oat stubble.

Treatment	Liveweight Gain (g/day)	Wool Growth (mm/day)
Control	0.0 <sup>a</sup>	0.180 <sup>a</sup>
100 g/d lupins	31.0 <sup>b</sup>	0.189 <sup>ab</sup>
150 g/d lupins	59.5 <sup>d</sup>	0.213 <sup>c</sup>
50 g/d canola meal	32.1 <sup>c</sup>	0.210 <sup>b</sup>
100 g/d canola meal	54.8 <sup>cd</sup>	0.214 <sup>c</sup>

<sup>a, b, c, d</sup> Values within columns with different superscripts differ significantly ( $P<0.05$ ).