

## PROTEIN SUPPLEMENTATION AND HAEMONCHOSIS IN YOUNG LAMBS

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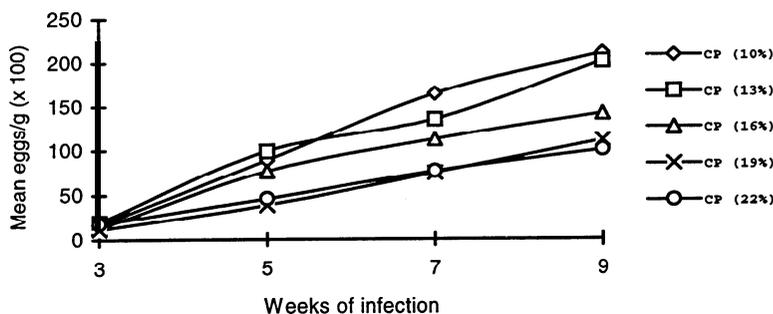
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Inefficiency of protein utilisation in sheep due to haemonchosis (Rowe *et al.* 1988) and reduced animal production can be ameliorated by adequate intake of protein (Steel 1978). Effects of infection with *Haemonchus contortus* were studied in lambs given iso-energetic diets (9.0 MJ ME/kg DM) with 10%, 13%, 16%, 19% and 22% crude protein. Sixty crossbred wether lambs (5 months old,  $25.4 \pm 0.3$  kg) were drenched with ivermectin (Ivomec, Merck, Sharp and Dohme; 2.5 ml/10kg liveweight), then 2 weeks later were randomly assigned to individual pens in a 5x2 factorial experiment (5 diets; 30 uninfected, 30 infected lambs). Diets were based on oat chaff, barley, cotton seed meal, urea and mineral mix. Half of the lambs were then infected with 1500 *H. contortus* larvae/head per week for 9 weeks. The other half (worm-free) were pair-fed to the same feed intake. Water was continuously available. Weighing, faecal sampling and bleeding were conducted fortnightly and feed intake was recorded daily from 3-9 weeks of infection. Lack of significant effect of infection on packed cell volume indicated that only a mild infection established. Results obtained by repeated measures AOV are given in Table 1. During infection, intake declined in infected animals but those on higher protein diets tended to maintain their feed intake and liveweight gain. Lower faecal egg counts were associated ( $P < 0.01$ ) with higher dietary protein levels (Figure 1).

**Table 1. The effect of diet, infection (uninfected and infected), time and their interactions on feed intake (kg/day), liveweight gain (kg) and packed cell volume (%) of uninfected and *Haemonchus contortus*-infected lambs. There were 6 lambs per treatment group**

	Diet	Infection	Time	Diet x infection	Diet x time
Packed cell volume	**	ns	*	ns	nx
Liveweight gain	**	ns	**	*	*
Feed intake	**	**	**	**	**

\* Significant ( $P < 0.05$ ), \*\* highly significant ( $P < 0.01$ ), ns = not significant.



**Figure 1. Effect of dietary protein on faecal worm egg counts**

These findings agree with those of Abbott *et al.* (1988) who showed that lambs on diets low in protein (88 g/kg DM) showed clinical signs of haemonchosis whereas lambs on higher protein diets (169 g/kg DM) did not show such signs. We conclude that higher protein intake may improve feed intake and production in lambs and assist in parasite management by reducing faecal egg output on to pasture.

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