

Copper Oxide Wire Particles as an Anthelmintic for Goats

A.J. Cawdell-Smith^A, P. Mayuni^A, M.L. Murphy^B and M.R. Knox^C

^A School of Animal Studies, University of Queensland, Gatton, Qld

^B Animal Research Institute, Yeerongpilly, DPI&F Qld

^C CSIRO Livestock Industries, Armidale NSW

Internal parasite infections are a major cause of lost goat productivity around the world. There are a number of pharmaceutical anthelmintics that have been developed to reduce internal parasites but many parasites have become increasingly resistant to these drugs. There is an international effort to examine alternate methods for the control of internal parasites in domestic animals and copper oxide wire particles (COWP) have been shown to be effective in sheep (Knox 2002). The objective of this study was to determine the effect of COWP on gastrointestinal nematodes in weaner goats under natural grazing conditions.

Weaner goats of both sexes at approximately 210 days of age and weighing 32±1 kg were allocated to 4 groups of 10 goats each. Each group contained the same number of males and females and 16 days prior to the commencement of the trial, each goat was inoculated with larvae of *Haemonchus contortus* at a rate of 100 larvae/kg bodyweight. At the commencement of the trial each animal in the 4 groups was orally administered with 0 (Control), 1.25g, 2.50g or 5g of COWP. The animals grazed together for 12 weeks and were monitored weekly for bodyweight, faecal egg counts and packed cell volume (PCV).

The results show that there was a significant anthelmintic effect of COWP on *H. contortus* from 13 days after initial COWP administration ($P<0.001$) in all groups compared to control, while the level of reduction varied with 1.25g and 2.5g treatments groups with time. The 5g group showed a greater reduction in faecal egg counts compared to the control group throughout the trial ($P<0.001$). In this latter group egg counts were reduced to 98% of the control group. Following inoculation with the nematode larvae all PCV values were reduced but with reduction in faecal egg counts following COWP treatment there was a significant improvement in PCVs by day 40 after the initial dose of COWP ($P<0.01$).

The results of this study indicate that COWP has a significant anthelmintic against *H. contortus* in weaner goats. Additional studies are required to determine the extent of the anthelmintic properties of copper in goats.

Knox, M.R. (2002). *Aust. Vet. J.* **80**:224.

Email: j.cawdellsmith@uq.edu.au