Abstract

Gastrointestinal nematode (GI) parasitism, dominated by haemonchosis, is a major constraint to economic goat production in Kenya. Currently, the conventional method of control is almost based on the use of anthelmintics. Consequently anthelmintic resistance has developed in goat farms in the county.

In view of this, there is need for alternative control methods. The use of Copper Oxide Wire Particles (COWP) to help reduce parasite burden is one such alternative. The objective of the present study was to determine the curative and preventive efficacy of COWP in naturally infected goat exhibiting predominant infections with *Haemonchus contortus, Trichostronglus* spp. and *Oesophagostomum venulosum.* The trial was conducted on a farm in Katani area of Kathiani Division, Machakos District, Kenya. Forty five small East African goats were randomly assigned into 3 groups based on faecal egg counts (FEC). Group I were treated orally with COWP boluses (Copinox®, Animal Ltd, UK; 2g), group II were treated with COWP plus Curafluke® (Fenbendazole and Rafoxanide, 7.5 mg Kg-1 bodyweight) and group III were the untreated controls. The infection levels were monitored over a period of 98 days by bi-weekly determination of FEC and blood PCV. Serum copper levels were determined before and at the end of the trials. Coproculture was conducted fortnightly to determine relative distribution of infective larvae genera. On days 56 and 98 respectively, 3 goats from each group were randomly selected and necropsied to determine GI nematode burden. The efficacy of COWP was nil against *Trichostronglus* spp. and *Oesophagostomum venulosum*. In contrast, the efficacy of COWP against *H. contortus* was clearly established in reducing the worm burden by 76.9% for group and 96.0% for group II goats on day 56 post-treatment. A single dose of either COWP or COWP plus CurafukeR was effective (group I, 62.8 ï 92.1%; group II, 97.0 ï 100%) in suppressing faecal egg output up to day 56 post-treatment, and group II FEC remained significantly lower than those of group I up to day 84 post-treatment ($p < 0.05$). There was no diference in PCV between the 3 groups.

Copper levels were within normal range before treatmet and remained within normal limits at the end of the trial. Results indicates that COWP may represent an alternative to conventional anthelmintics in the control of *H. contortus* infection in goat farms where this parasite is predominant.