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PO1.55

Evaluation of Cassava (*Manihot esculenta*) Leaves for Worm Control in Sheep

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Helminthiasis is one of the causes of mortality and morbidity in sheep and goats in Malaysia. However, due to anthelmintic resistance which is escalating in Malaysia and other countries, other alternatives for worm control is needed. One such method is the use of local herbal products for worm control. Cassava is a tropical plant which originated from South America. Previous studies conducted in Vietnam (Thi mui Nguyen *et al.*, 2005) and Cambodia (Seng *et al.*, 2006) in goats have proven anthelmintic effect of cassava leaves. Therefore, this study was conducted to evaluate the anthelmintic effect of Malaysian cassava *Manihot esculenta* leaves on nematode parasites of sheep. Twenty Malin breed sheep were randomly selected and equally divided into (untreated) control group (n = 10) and (treated) fresh cassava leaves fed group (n = 10). Faecal egg counts (FEC) using the modified McMaster technique was carried out 3 times per week and the FAMACHA score for assessing clinical anaemia was conducted weekly for 3 months. The results indicated that there was no reduction in FEC but Total Worm Count (TWC) showed a reduction of 40% in the treated group as compared to the untreated group. These results indicate that feeding cassava leaves has an effect on the TWC. Therefore, the use of cassava leaves is a potential alternative for worm control but further work in terms of dosage and toxicity of feeding it in ruminants should be evaluated.

PO1.56

Investigation of Anthelmintic Activity of *Eucalyptus staigeriana* Essential Oil on Goat Gastrointestinal Nematodes

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Gastrointestinal parasitism is one of limiting factors for the breeding of sheep and goats. The increase of anthelmintic resistance and the impact of conventional anthelmintics on the environment have prompted the search for alternative strategies, such as phytotherapy. The aim of this study was to evaluate the anthelmintic efficacy of *Eucalyptus staigeriana* essential oil (EsEO) and its toxicity. The *in vitro* effects of EsEO were determined through the egg hatching test and the inhibition of larval development of *Haemonchus contortus*. The oil was subjected to acute and subacute toxicity. 500 mg/kg EsEO was administered orally over five days to evaluate its effects on intestinal nematodes in mice. The fecal egg reduction count test was performed using 30 goats naturally infected with gastrointestinal nematodes, divided into three groups: treated with 500 mg/kg EsEO, treated with ivermectin, and an untreated group. Fecal samples were collected from each animal to determine the count of eggs per gram (epg) at 8, 15 and 22 days after treatment. 1.35 and 5.4 mg/ml EsEO inhibited 99.27% and 99.20% *H. contortus* egg hatching and larval development. In subacute toxicity of EsEO, all parameters were found to be in the normal range, and histopathological analysis of organs did not present alterations. At a concentration of 500 mg/kg, the essential oil was 86% effective against mice nematodes. EsEO efficacy against goat gastrointestinal nematodes was 59% at 15th day after treatment. *E. staigeriana* essential oil showed *in vitro* and *in vivo* anthelmintic activity.

PO1.57

Evaluating the Anthelmintic Efficacy of Eleven Browse Plant Extracts from Kenya Using in-vitro Assays

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Introduction: The search for novel approaches in control of ruminant gastro-intestinal nematode infections has been necessitated by development of anthelmintic resistance worldwide. Condensed tannins (CT) are recognised as having anthelmintic activity in small ruminants.

Methodology: Nine native and two introduced browse species from Kenya varying in CT concentrations from 0-10% were collected, dried, ground and evaluated for their anthelmintic potential using egg hatch (EHA), larval development (LDA) and larval migration inhibition (LMI) assays. Two crude extracts were prepared from the leaves [acetone (70%)/water (30%) (AWE), and water (WE)] and were tested in serial dilutions of 25, 5, 1, 0.2, 0.04 and 0.008 mg/ml in 24-well microtitre plates. Thiabendazole (TBZ) was used as the positive control for the EHA and LDA, while tetramisole was used in the LMI.