

EFFICACY OF ANTHELMINTIC TREATMENT TO CONTROL HELMINTHIASIS IN SHEEP OF VETERINARY INSTITUTE

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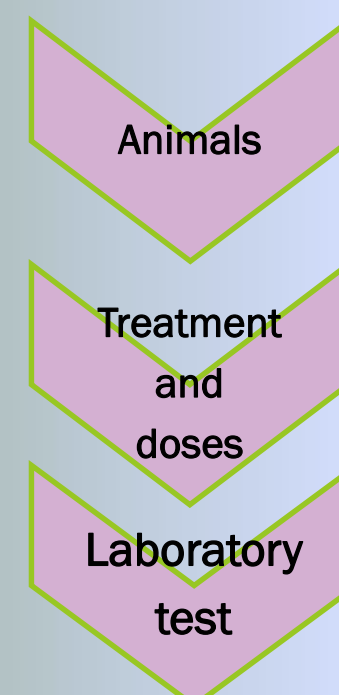
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ABSTRACT

The trials of faecal egg count reduction test (FECR) were conducted on sheep in the Veterinary Institute, Kluang. A total of 60 weaned sheep were selected and divided into six (6) groups. Group A was treated with Ivermectin (0.5 ml / 25 kg of body weight), Group B received Closantel (1 ml/5 kg of body weight), Group C was treated with Fenbendazole (6 ml/25 kg of body weight), Group D was treated with Levamisole (5 ml/10 kg of body weight), Group E was treated with Cydectin (1 ml/5 kg of body weight) and the remaining 10 were untreated controls. Anthelmintic drugs were administered orally except for Ivermectin and Closantel were administered by subcutaneous injection.

Faecal samples were collected from each sheep before treatment and repeated on day 14, 30, 45 and 60 post treatment. The worm egg counts were estimated by using McMaster's method. The results of anthelmintic tests were calculated from the mean number of eggs per gram for each group. The percentage reduction in the faecal egg count was calculated using the change in faecal egg count of the control group as a correction factor. The population of worm was classified as resistant if the adjusted percentage reduction was less than 90%. It is concluded that only levamisole can be used for helminthiasis control. The results showed that worms were suspected to be resistant to Ivermectin, Closantel, Cydectin, and totally resistance to fenbendazole. The strongyle population is mainly made up of 80% *Haemonchus contortus* and 20% of species were *Oesophagostomum* and *Bunostomum*.

MATERIALS AND METHOD



- 60 weaned sheep were selected and divided into six (6) groups. All sheep were weighed before anthelmintic drugs were given.
- Group A was treated with Ivermectin (0.5 ml / 25 kg of body weight), Group B (Closantel, 1ml / 5 kg of body weight), Group C (Fenbendazole, 6ml / 25 kg of body weight)
- Group D (Levamisole, 5 ml / 10 kg of body weight), Group E (Cydectin, 1ml / 5 kg of body weight), Group F (untreated control). Anthelmintic drugs were administered orally except Ivermectin and Closantel were administered by subcutaneous injection.
- Faecal samples were collected from each sheep (pre-treatment 1 and 11) and repeated on day 14, 30, 45, and 60 post treatment. The worm egg counts were performed by using McMaster's technique. The mean number of eggs per gram for each group were calculated.
- The percentage reduction in the faecal egg count was calculated using the change in faecal egg count of the control group as a correction factor.



RESULTS

Drug (n= 10)	Pre-treatment	Day 14 post treatment	Day 30 post treatment	Day 45 post treatment	Day 60 post treatment	Status of Resistance
IVERMECTIN Mean faecal egg count % Reduction	4970 (±3241.76)	2590 (±1699.97) 82.14	1570 (±2041.81) 82.07	1550 (±2756.10) 59.01	260 (±471.88) 55.31	Suspect Resistant
CLOSANTEL Mean faecal egg count % Reduction	4940 (±2952.66)	2660 (±2141.24) 86.10	1150 (±2060.88) 90.40	1260 (±1512.32) 75.66	210 (±351.03) 73.64	Suspect Resistant
FENBENDAZOLE Mean faecal egg count % Reduction	4960 (±3345.38)	4340 (±4297.60) 72.14	1850 (±2353.37) 80.55	1560 (±3393.20) 61.59	290 (±566.57) 53.60	Resistant
LEVAMISOLE Mean faecal egg count % Reduction	4980 (±3178.33)	30 (±48.30) 99.86	1120 (±2042.22) 91.35	2570 (±3603.72) 54.07	350 (±904.62) 59.34	Susceptible
CYDECTIN Mean faecal egg count % Reduction	4980 (±3002.89)	2170 (±2844.90) 88.03	1080 (±2053.61) 90.13	1800 (±3042.66) 61.92	330 (±1008.90) 54.63	Suspect Resistant

The helminth populations were classified as :

- Sensitive : % Reduction > 90 %
- Suspected resistant : % reduction 80 - 90%
- Resistant : % reduction < 80%. (Panday and Sivaraj, 1994)

The result showed that the worm was :

- Sensitive → anthelmintic Levamisole
- Suspected resistant → Ivermectin, Closantel and Cydectin
- Resistant → Fenbendazole
- Noted : The Sheep Unit has been using:**
 - Cydectin for 3 years,
 - Closantel for 4 years,
 - Fenbendazole has been using in lick- salt since 1990
 - Ivermectin is frequently used to treat bottle jaw cases.

CONCLUSION

- From this study, Ivermectin, Closantel and Cydectin showed poor efficacy in treating helminthiasis.
- Fenbendazole is no longer effective and should not be used anymore.
- Levamisole should be used due to its reliable efficacy on treating helminthiasis in sheep at the Veterinary Institute.

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