

Detection of Resistance of Gastrointestinal Nematodes to Albendazole and Ivermectin in Goats

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Abstract

Gastrointestinal nematodes infection is one of the most important diseases of small ruminants in Malaysia, particularly goats. Control of gastrointestinal helminthiasis in small ruminants relies almost exclusively on the use of anthelmintic drugs but the effective control is limited by the development of anthelmintic resistance. This study evaluated the efficacy of albendazole and ivermectin that are currently used as preventive medicine in herd health programme of small ruminants as well as to detect the presence of anthelmintic resistance to both anthelmintics. Faecal examination was done by the McMaster technique to determine the number of eggs/g faeces. Efficacy of albendazole and ivermectin were calculated based on arithmetic means of pre-treatment and post-treatment eggs/g (e.p.g). While detection of anthelmintic resistance was done by faecal egg count reduction test (FECRT) in which arithmetic means of post-treatment e.p.g. for treated and control group were used. In this study, albendazole was moderately effective with percentage efficacy of 86% and ivermectin was ineffective with percentage efficacy of 16%. Anthelmintic resistance was detected to both drugs used in this study in which albendazole with 87% of reduction on faecal egg counts (FEC) associated with 61% lower 95% confidence limit and ivermectin with 13% reduction of FEC associated with -91% lower 95% confidence limit. In this study the resistance of gastrointestinal nematodes to albendazole and ivermectin in treated goats was detected. There was also evidence of reduction in FEC in both treated groups but not to a desirable level.

Keywords: helminthiasis, effective, resistance, efficacy, goats.