

Abstract

Parasitic diseases of the lung are one of the most important problems of small ruminants because they cause great economic losses. Currently, the use of doses lower than the therapeutic unit, general preventive treatments at the herd level, and continuous and frequent use of a drug are included in the development of the drug resistance phenomenon. The aim of this study was to investigate the effect of albendazole and levamisole as antiparasitic agents in the lungworm control program in goats. All goats were healthy at the time of sampling and were treated with anthelmintics for at least eight weeks before sampling. Sampling of 110 goats in the spring and summer of 1400 from different regions of Urmia city was done in two periods including both sexes of the same age. The results showed that 3.6, 50.8 and 41.9% were infected with *Dictyocaulus filaria*, *Muellerius capillaris* and *Protostrongylus rufescens*, respectively. Lung parasites are one of the most important pathogens of the respiratory system of goats. For this reason, molecular analysis of *Dictyocaulus filaria* adult worm isolated from goat lung was performed in this study. Adult worms were isolated from infected goat's lungs and internal sequencing was performed after DNA extraction. The sequencing results of both genes showed that the identified parasites are 100% similar to the reference sequences recorded in GenBank. The overall effectiveness against *Protostrongylus* when treated with albendazole and levamisole was 88.59 and 90.05, respectively. But the low confidence limit was calculated as 70.45-71.23. However, a low level of effectiveness of these anthelmintics against *Dictyocaulus* and *Muellerius* was detected. In this study, a

high percentage of the lung parasite *Protostrongylus rufescens* responded to the treatment and no resistance was observed. However, pulmonary parasites *Muellerius capillaris* and *Dictyocaulus filaria* in goats of this region are resistant to albendazole and levamisole.

Keywords: Drug resistance; Albendazole; Levamisole; Lung worm; Goat and faecal larvae count reduction test