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Author: Shadi Rashidi

Title of Thesis: *In-vitro* assessment of drug resistance to albendazole and rafoxanide in *Fasciola hepatica* in sheep of Marivan city ,Iran

Abstract

Fasciolosis is an important parasitic disease that limits the productivity of ruminants. During the last two decades, anthelmintic drugs have been increasingly applied in Marivan municipality, Kurdistan Province, Iran. The aim of the present study was to evaluate prevalence and drug resistance of *Fasciola hepatica* to albendazole and rafoxanide in sheep in Marivan municipality, West of Iran. For this purpose, a total number of 290 sheep livers were collected at Marivan slaughterhouse. They were cut into small pieces and adult *F. hepatica* were removed from naturally infected livers of sheep. Then were count and crushed. About 1,000 eggs of *F. hepatica* in 0.9% Ringer's solution were provided and incubated at 28°C for 16 days. On the 14th day, albendazole (0.1 µg/ml) and rafoxanide (0.1 µg/ml) along with control group were incubated at 28°C for 48 h. The percentage of hatched eggs and lethal dose of 50% larvae (LD₅₀) were figure out. Overall, 50 out of 290 examined livers (17.24%) were positive for *F. hepatica*. The highest infection rate of *F. hepatica* was found in the winter (2.17%). There was significant difference between percentage of the hatched eggs and both treated with albendazole and rafoxanide and control groups. The average of the hatched eggs of *F. hepatica* was lower in rafoxanide treated group (19.6±17.6) than albendazole treated group (32.8±14.9) and control group (35.4±12.1). LC₅₀ did not demonstrate resistance to albendazole (32.75%) and rafoxanide (19.5%) in treated groups. It was concluded that there was not resistance to albendazole and rafoxanide in sheep of the region.

Keywords: Drug resistance, Albendazole, Rafoxanide, *Fasciola hepatica*, Sheep.