ABSTRACT

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Title of diploma thesis: Comparison of anthelmintics metabolism and activities of biotransformation enzymes in susceptible and resistant strains of *Haemonchus contortus*

Haemonchus contortus is a predominant gastrointestinal parasite of sheep and goat. This blood-sucking parasite cause severe anaemia with mortalities, particularly in young animals. The greatest problem in pharmacotherapy of haemonchosis is a resistance to anthelmintics, which is worldwide. Biotransformation enzymes have the ability to inactivate anthelmintics via biotransformation and it contributes to development of helminths resistance. The aim of this project was to compare anthelmintics metabolism and activities of biotransformation enzymes in susceptible and resistant strains of *H. contortus*. For a testing three strains of *H. contortus* were chosen: anthelmintics-susceptible strain – ISE strain, benzimidazole-resistant strain – IRE strain, anthelmintics-resistant strain – WR strain. The results showed that the activities of reductases of carbonyl group of the model substrates are higher in resistant strains than in susceptible strain, on the contrary to the biotransformation of albendazole and flubendazole *in vitro* where the results are opposite. It may be caused by different mechanisms of anthelmintic resistance development. There are many mechanisms of drug resistance in helminths and many times they are combined.