

ABSTRACT

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Title of diploma thesis: The use of new *ex vivo* tests to find ferns with anthelmintic effect

Haemonchus contortus is one of the worldwide spread nematode parasitizing in the gastrointestinal tract of small ruminants. The nematodes cause a disease called haemonchosis. A typical symptom of the disease is anemia resulting from the sucking of blood by nematodes. The disease also reduces productivity and may result in the death of the host. Only a few drugs are used for the treatment of haemonchosis, the number of newly introduced drugs is low. Nowadays, the emerging resistance to anthelmintics is a growing problem due to the high *H. contortus* adaptivity as well as the incorrect use of synthetic drugs. In addition, the synthetic drugs pollute the environment, which is why there is an effort to find herbal products with an anthelmintic effect.

Anthelmintic activity has been demonstrated in some Asian and African ferns, so we decided to test the European fern species and evaluate their anthelmintic activity. Anthelmintic activity against nematodes, specifically *H. contortus*, was tested using egg hatch test and ATP bioluminescence assay in adults. Ferns that reduced the amount of ATP in adult *H. contortus* are *Athyrium distentifolium*, *Dryopteris borreeri*, *Dryopteris cambrensis* and *Dryopteris aemula*.

These fern extracts will be used in further experiments.