

ABSTRACT

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Title of diploma thesis: Monitoring of albendazole transfer from ovine faeces to fodder plants by LC-MS

In general, drugs might be a significant source of pollution in the environment especially drugs with high persistence. Albendazole (ABZ) belongs to a benzimidazole group of anthelmintic drugs. These drugs are regularly and frequently used to limit and treat parasitic infections in animals. ABZ enters the environment via animal excrements and it can have negative effects on non-target organisms.

Laboratory experiments have shown that the plants can uptake and even biotransform the ABZ, however, it is not known whether these phenomena occur in the real field conditions. The present study monitors the transfer of ABZ and its transformation products (TPs) from the faeces of treated sheep to common fodder plants such as *Medicago sativa* and *Trifolium pratense*. We wanted to know whether the possibility of transferring these compounds from excrement into the soil and from soil to plants exists in real field conditions.

Our study successfully revealed the occurrence of ABZ TPs (ABZ-SO and ABZ-SO₂) in both fodder plants. The highest concentration of TPs was observed at the 1. and 2. week after the application of faeces. Then, the amount of TPs in plants decreased during the time, except in May, where a slight increase was observed, probably due to higher precipitation. Even two months after the first contact of fodder plants with faeces, ABZ-SO and ABZ-SO₂ were still present. The presence of the TPs in fodder plants represents not only a danger to herbivorous invertebrates, but also may play an additional role in the development of ABZ resistance in helminths.