

ABSTRACT

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Title of diploma thesis: Study of the effect of albendazole in the environment on
the antioxidant system of red clover (*Trifolium pratense*)

Today, anthelmintics are among the essential drugs for the therapy and prophylaxis of infectious diseases caused by parasitic worms. However, these substances may be further released into the environment by the excrements of treated animals and affect non-target organisms, such as plants, which have the ability to absorb and accumulate various substances.

In this study, we focused on the effect of the often used anthelmintic albendazole on the antioxidant system of red clover (*Trifolium pratense*), which is commonly found in meadows and pastures. The effect of low concentrations of albendazole available in the environment on the antioxidant enzymes catalase, superoxide dismutase, ascorbate peroxidase, peroxidase, glutathione peroxidase, glutathione reductase and glutathione S-transferase was studied. In addition to antioxidant enzymes, we also monitored the concentration of plant photosynthetic pigments chlorophyll a, b and carotenoids. The results were evaluated in control and albendazole-treated clover plants grown in the experimental field under completely natural conditions. A change in specific activity was found for all mentioned enzymes, except for the glutathione reductase and glutathione peroxidase, where no activity was measured. In the case of plant pigments, there was only an increase in the concentration of carotenoids. Given the results obtained, which showed significant changes in the specific activity of some enzymes and a change in the concentration of carotenoids, we cannot rule out the effect of albendazole as a stressor on the antioxidant systems of red clover.