

ABSTRACT

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Title of the bachelor thesis: Mycotoxins and human health

This bachelor thesis deals with all aspects of the mycotoxin biosynthesis and with the negative effect of mycotoxins not only on the human organism but also on domestic and farm animals from the point of view of animal husbandry.

In the first part of the thesis mycotoxins such as contaminant substances in the human environment are introduced and defined and possible misuse of mycotoxins in terrorist attacks is also mentioned. This is followed by a general description of micromycetes and their significance not only as producers of dangerous mycotoxins, but also the positive use of micromycetes in food production, modern biotechnologies, in biological plant protection as well as in the sewage treatment are also discussed. A great attention is also given to the pathological effects of micromycetes because they can cause various different mycotic and allergic disorders.

The following chapter deals with the sources of mycotoxins. The thesis particularly deals with the three most important genera of mycotoxin-producing moulds: *Aspergillus*, *Fusarium* and *Penicillium*. Important species within the three mentioned genera are described from the point of view of their macroscopic properties as well as their microscopic structure.

The chapter dedicated to mycotoxins presents the individual important mycotoxins, their chemical structure, but also physical properties, their occurrence in both the human and animal food as well as their toxicological effects. Consequently, a description of the detection and determination by the way of instrumental analysis as well as by immunological methods comes after. The last section of the thesis concentrates on the limitation of mould incidence and on the methods of the inactivation or the destruction of mycotoxines.

Key words: mycotoxins, micromycetes, mycotoxicoses, mycotoxin detection