Methodologies to prevent and control the biosynthesis of different mycotoxins in food and feeds

M. Reverberi, V. Scala, A.A. Fabbri, M. Scarpari, C. Fanelli, S. Zjalic, C. Nobili

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Abstract

Mycotoxins are harmful secondary metabolites produced by several widespread environment-contaminating fungi mainly belonging to *Fusarium, Aspergillus* and *Penicillium* genera. These compounds can be mutagenic, teratogenic and carcinogenic for animals and humans. In our diet we experience a quite harmful daily consumption of mycotoxin-contaminated foods. Recently, many natural-based antioxidant or biocontrol-related strategies have been assessed as environment-friendly approaches for controlling the production of many mycotoxins in feed and foodstuffs. Some basidiomycetes (e.g., *Trametes versicolor*), are known for their healthy effects on animals and human. Here we show that raw, semi-purified and purified exo-polysaccharides and some secreted hydrolytic enzymes (e.g., ligninolytic enzymes) from these mushrooms have demonstrated the ability both to inhibit the biosynthesis or (and) to degrade different mycotoxins (aflatoxins, ochratoxin A, *Fusarium* toxins) already present in several feed- and foodstuff such as wheat and maize seeds. The results obtained are promising in view to apply a more environmental friendly strategy in order to achieve an improved control of different toxins which often are present at the same time in foods and feeds.