Acronym: Mycotoxin synthesis inhibition by natural and synthetic additives
Contract number:
Action line: Bilateral scientific project
Type (Programme): Bilateral funding
Project cost: 5 400 EUR
Project funding:

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Description:
Fungi are particularly widespread organisms in nature. Some are used for food production while others cause diseases of plants, animals and humans. A number of fungi produce toxic compounds – mycotoxins. Fungal food contamination is unavoidable and animals as well as humans are exposed to chronic and acute impact of mycotoxins. Traditionally mould-produced foods are under constant monitoring due to possible contamination and mutation which can lead to mycotoxin production.

Present project formulates and investigates efficacy of Chinese traditional medicinal herbs with addition of synthetic and natural substances in different water activity environment as well as animal feed in order to reduce mycotoxin concentration. Antifungal effect of selected substances will be investigated in in vitro (linear growth inhibition, changes of viable spore numbers as well as inhibition of spore germination) conditions and in vivo conditions (different animal feed mixtures). During research, ability of selected substances to inhibit mould growth and mycotoxin production will be assessed in different water activity levels in order to establish hurdle effect of different environmental conditions (water activity, selected substance and temperature). Degradation of selected important mycotoxins (aflatoxin, deoxinivalenol, fumonisins and ochratoxin A) by lactic acid bacteria as well as physical and chemical agents (microwave, acid and alkali pH value) will also be investigated.
This proposed project is an extension and directly related to currently occurring scientific project in our laboratory (113 - 1130473 - 0334 "Synergistic mixtures in antifungal and antimycotoxigenic food protection/Sinergističke smjese u antifungalnoj i antimikotoksigenoj zaštiti hrane").
Research results would lead to development of more efficient food preservation methods. Functional properties of many of the components would also result in safer and healthier foods.

**Project task:**
Evaluation of fungicidal effect of traditional Chinese medicinal plants and antymycotoxicogenic effect on important mycotoxin production. Influence of different water activity levels and essential oils on growth of selected fungal species.