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Aflatoxin detoxification effect of some medicinal plants at *in vitro* condition

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Aflatoxin producing fungi are one of the most important sources of contamination of corn and soybeans used in animal feed. Aflatoxin is a group of mycotoxins produced by two types of fungi called *Aspergillus flavus* and *Aspergillus parasiticus*. After absorption, aflatoxin is converted into liver by the enzymes of the cytochrome P450 group to various compounds such as aflatoxycol, aflatoxin Q1, aflatoxin P1, and aflatoxin M1. In addition, conversion these toxins into other metabolites such as aflatoxin 8,9 epoxide can cause DNA mutation and as a result of liver cancer in humans and animals. Because aflatoxin contamination of foods and feeds is unavoidable, several strategies for decontamination and inactivation of toxin are proposed to minimize harmful effects in animals and its consequences in order to prevent aflatoxin poisoning in humans. Recently, much attention has been paid to the use of natural plant-derived biological compounds. As some secondary metabolites of medicinal herbs have been shown to be effective in preventing the growth of fungi. In order to study the effect of medicinal plants powder on removal of aflatoxin B1 an *in vitro* experiment was carried out with 25 treatments in 3 replications. Samples containing medicinal plants were incubated for 72 hours with aflatoxin and the toxin residual in the supernatant was determined at 6 and 72 hours by high-performance liquid chromatography method. Results showed that the highest aflatoxin removal at time 6 were related to dill (64%), chicory (62%), purslane (61%) and peppermint (60%), respectively. The highest aflatoxin elimination at time 72 was related to spearmint (81%). According to the results of this experiment spearmint, dill, chicory and purslane medicinal plants could be used to study their aflatoxin detoxification at *in vitro* condition.

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