

Determination of total aflatoxins and aflatoxin B1 content in oleaginous seeds and dried fruits coming from supermarkets and small shops

Adrian Maximilian MACRI, Andrei SZAKACS, Sorana DAINA

University of Agricultural Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, 3-5
Calea Mănăștur street., 400372, Cluj-Napoca, Romania
adimacri@yahoo.com

Abstract

A very important category of mycotoxins are aflatoxins, made by Aspergillus fungi (A. flavus, A. parasiticus and A. nomius). From all aflatoxins, the following stand out: aflatoxin B1 (AFB1) - most toxic one, aflatoxin B2, G1 and G2. Study was conducted on 25 samples of fruit and seeds originating from supermarkets and small shops around Transylvania. Organoleptic and mycotoxicological tests were performed for all samples. For mycotoxicological testing, RIDASCREEN®FAST Aflatoxin was used, an immunoenzymatic competitive test for quantitative determination of aflatoxins from aliments and cereals and RIDASCREEN AFLATOXIN B1, ELISA test for quantitative determination of Aflatoxin B1 from cereals and fodders. Upon organoleptic testing, 2 samples were noticed to have modified parameters. Mycotoxicological testing revealed 6 samples with higher than normal total aflatoxin content, and 1 sample contained aflatoxin B1 above the upper limit established by the European legislation. The highest total aflatoxin and aflatoxin B1 levels were found in roasted corn (46.5 ppb for total aflatoxins, respectively 4.01ppb for Aflatoxin B1).

Keywords: *fungi, mycotoxins, total aflatoxin, aflatoxin B1, oleagineous seeds*