

## Detection of Total Aflatoxin in Flour of Wheat and Maize Samples in Albania Using ELISA

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**Abstract :** Aflatoxins are potentially toxic metabolites produced by certain kinds of fungi (molds) that are found naturally all over the world; they can contaminate food crops and pose a serious health threat to humans by mutagenic and carcinogenic effects. Several types of aflatoxin (14 or more) occur in nature. In Albanian nutrition, cereals (especially wheat and corn) are common ingredients in some traditional meals. This study aimed to investigate the presence of aflatoxins in the flour of wheat and maize that are consumed in Albania's markets. The samples were collected randomly in different markets in Albania and detected by the ELISA method, measured in 450 nm. The concentration of total aflatoxins was analyzed by enzyme-linked immunosorbent assay (ELISA), and they were ranged between 0.05-1.09 ppb. However, the screened mycotoxin levels in the samples were lower than the maximum permissible limits of European Commission No 1881/2006 (4 µg/kg). The linearity of calibration curves was good for total aflatoxins (B1, B2, G1, G2, M1) ( $R^2=0.99$ ) in the concentration range 0.005-4.05 ppb. The samples were analyzed in two replicated measurements and for each sample, the standard deviation (statistical parameter) is calculated. The results showed that the flour samples are safe, but the necessity of performing such tests is necessary.

**Keywords :** aflatoxins, ELISA technique, food contamination, flour

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