

DETECTION OF FUMONISINS IN CORN BY THREE ANALYTICAL TECHNIQUES

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SUMMARY

Fumonisin is a group of mycotoxins which were isolated and purified recently, they can contaminate several food cereals. In Mexico the natural occurrence of fumonisin in maize is reported in different parts. Exist many ways for to try it identification, because that presence can lead to a food safety risk. The objective of this study was to search fumonisin in Mexican maize, using three analytical techniques, they was HPLC, ELISA and Chromatography of Thin Layer (TLC). This work was carried out in the laboratory of Toxicology of the UAM-Xochimilco at spring- autumn 2 000. Eight samples of three varieties of corn (yellow, white and blue) collected from three different places of Mexico were analyzed for fumonisin B1. 1 kg of each sample was gathered. The results of the fumonisin analysis for Chromatography of Thin Layer (TLC) they were all negative, and for the others two technique (HPLC, ELISA) were positives. The levels of fumonisin contamination detected by HPLC in the range 3.83- 25.03 mg/Kg. The levels of the fumonisin detected by ELISA technique in the range 0.12 ppm - 0.7 mg/Kg., much lower than HPLC. Analysis of the results not showed a correlation between both techniques. This is the first report of fumonisin contamination of corn from Mexico. In conclusion, this paper reports that the technique Chromatography of Thin Layer was not get the point, because problems in the application volume, and suggest the employ of Planar Chromatography, by to optimization of developing conditions, sample application and sample dosage like an alternative.