

## COMPARISON OF ELISA WITH UHPLC-ESI- MS/MS METHOD FOR THE DETERMINATION OF AFLATOXIN M<sub>1</sub> IN MILK

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### ABSTRACT

Aflatoxin M<sub>1</sub> is a hydroxylated metabolite excreted in milk, which is considered as a potent health risk factor for consumers, therefore, the routine control of this toxin is essential. To monitor the concentration of this toxin, during this study are used and compared to each other for the correlation, two methods, the competitive method ELISA and UHPLC-ESI-MS/MS as a confirmative method. According to the results found using the two methods, from 192 of raw cow's milk samples analyzed, about 40% of samples resulted positive with AFM<sub>1</sub>, among them, 6.5 % of the samples exceeded the maximum tolerable level according to ELISA method, and 5.5 % of the samples according to UHPLC-ESI-MS/MS. In conclusion, the results of this study suggest that there is a good correlation between the two methods used. The UHPLC-ESI-MS/MS method requires longer time of determination than ELISA method because there is the need of the extraction of milk samples for AFM<sub>1</sub> by the immunoaffinity columns ahead of quantitative analysis.

**Key words:** Aflatoxin M<sub>1</sub>, Milk, ELISA, UHPLC-ESI- MS/MS, Comparison