

Assessment of the Conformity of the Methods for Aflatoxin B₁ and Deoxynivalenol Determination in Grain and Feeds by Method of High-Performance Liquid Chromatography

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The suitability of methods for determination of residual amounts of aflatoxin B₁ and deoxynivalenol in grain, products and feeds from grain by the method of high-performance liquid chromatography with validation criteria was evaluated: linearity, detection limit, specificity, intralaboratory reproducibility, correctness (return). It was concluded that the methods for determining in cereal cultures of aflatoxin B₁ and deoxynivalenol content with purification on immunoaffinity columns by the method of high-performance liquid chromatography are suitable for the study of grain, products and feeds from grain and can be used by laboratories for conducting similar studies. Adapted methods of mycotoxins determination are highly sensitive and meet European requirements according to their parameters. The recovery percentage is $85.8 \pm 3.65\%$ for all the concentrations of aflatoxin B₁ analyzed. It corresponds to the minimum allowable value according to Commission Decision 2002/657 / EC, with the coefficient of variation (CV,%) being 2.13 ± 0.67 and is in accordance with Commission Decision 2002/657 / EC. The recovery rate is $89.2 \pm 5.3\%$ for all analyzed concentrations of deoxynivalenol, which corresponds to the minimum allowable value according to Commission Decision 2002/657 / EC, the coefficient of variation (CV, %) is 9.4 ± 1.65 and is suitable

Keywords: mycotoxins, aflatoxin B₁, deoxynivalenol, grain, feed, high-performance liquid chromatography
