

DON DETECTION FROM CEREALS USED IN ALIMENTATION, BY RAPID IMMUNOCHROMATOGRAPHIC TESTS

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Key words: mycets, mycotoxins, DON, wheat, immunochromatography

SUMMARY

The mycotoxins are natural chemical compounds (toxic metabolites) produced by different species of fungi, which contaminates the aliments. The principal mycotoxicogenic species (known over 110.000), developing in the animal feed and human food, are framed in five species: *Aspergillus*, *Penicillium*, *Fusarium*, *Claviceps*, *Alternaria*. In the aliments security, the mycotoxins with risks are grouped in 6 families: Aflatoxins, Ochratoxins, Fumonisin, Tricothecene, Patulin, Zearalenone. The FAO data evaluated about two decades that about 25 % of the cereals world crops was affected by mycotoxins. Their proportion increased, so that today the alimentary risks of the mycotoxins are considered a major problem for the public health.

DON (Vomitoxin or Deoxinivalenol) is produced by mycets from the genus *Fusarium*, which is growing in ubiquitous conditions on cereals (maize, wheat, barely, oat). The contamination degree can vary from a year to the other.

There were studied 25 samples of wheat, sampled from different varieties and storage facilities, cultivated in the area of Cluj-Alba.

There were made: the organoleptic analysis (by macroscopic exam and with the stereomicroscope), the mycologic exam (NTG/g and CFU/g) and the DON detection using the immunochromatographic test RIDA[®] QUICK DON. For the last analysis the used reagents and the testing bands permit the DON detection when the concentration is equally or higher than 1 mg/kg (ppm), respectively 2 mg/kg (ppm).

The wheat samples analyzed did not present organoleptic modifications macroscopically distinguished. The immunochromatographic test RIDA[®] QUICK DON emphasised DON concentrations equally or higher than 1 mg/kg (ppm) in 16 samples. Only in 9 samples the result was negative. From the 16 positive samples a number of 12 presented increased humidity (over 14%). The mycotic charge (CFU/g) correlated positively with the humidity and the presence of DON.

The using of the immunochromatographic test RIDA[®] QUICK DON allows a quick and economic appreciation of the content in DON mycotoxin from cereals. The correlations of the results confirm the influence of the production and storage conditions of the wheat upon mycotoxicologic contamination. We consider that it is necessary to increase the attention upon the HACCP in the "production-storage" chain of the cultivated wheat in the areas studied by us, in order to reduce the animal and human risks degree.

(Bibliography: with the author)