

SURVEY OF MOLD FLORA AND DEOXYNIVALENOL CONTAMINATION IN CORN IMPORTED TO ISRAEL

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Deoxynivalenol (3,7,15-trihydroxy-12,13-epoxytrichothec-9-en-8-one), also known as DON or vomitoxin, is a trichothecene mycotoxin produced by *Fusarium graminearum*, a fungus commonly found in cereals all over the world. Its ingestion results in subsequent feed refusal, diarrhea, vomiting and general digestive disorders in animals. Heavy contamination with DON was reported in wheat, corn and barley in Canada, the United States and elsewhere. It was identified in the "yellow rain" from Southeast Asia. The toxin persists in grain and does not disappear spontaneously.

Israel imports most of its grain for animal and human consumption from abroad. Most of the corn is purchased from the USA as grade II, with a moisture content of 15%. It is therefore of particular importance to examine the mold flora of the imported grains and to search for the presence of DON in the grain shipments. A preliminary survey of mold flora and contamination by DON was carried out recently in Israel for the first time, on imported corn.

The predominant species found on grain seeded on potato dextrose agar, Czapek's medium or malt agar were *Aspergillus flavus* and *Aspergillus versicolor*. DON analysis, carried out on three shipments of corn unloaded in Haifa during March-May 1985, was performed by electron capture detection gas chromatography after derivatization with heptafluorobutyl imidazole. At fortification levels of 0.1, 1 and 2 µg/g, recoveries were in the range of 80-100%. Despite the high sensitivity of the method used, DON was not detected in any of the analyzed samples. However, since the moisture content of the samples exceeded the percent which is in equilibrium with 65% relative humidity in the atmosphere (considered to be the level for safe grain storage) the possibility exists that mycotoxins would be produced during storage under such conditions. The finding of a high frequency of *A. flavus* in the mold survey lends further support to this assumption.