



Multi-Residue Mycotoxin Analysis

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Although *Aspergillus* (Aflatoxins, Ochratoxin A) are generally associated with peanuts and *Fusarium* (Deoxynivalenol, Zearalenone) with wheat, these fungi and those that produce other toxins are not host selective and so can cross plant species. This situation is complicated by the fact that the microscopic mold may not be visible to the naked eye. Also, when infected grains are processed, any visible mold is lost but the toxic metabolites carry over into the finished products. Thus, multi-residue analytical screens for toxins in grain and finished goods are a wiser choice than single-family protocols. We present a **single screen** to cover **five families** of toxins. This method is suitable for analysing beverages, grains and feeds.

Sample Preparation

An aliquot of the beverage or extract is evaporated to dryness to remove alcohol or any organic solvent. The residue is reconstituted in a buffer solution and (if needed) partitioned with Pentane to remove fats. Load 5 mL of the aqueous solution on a Vicam Afla/Don/Ocra/Zea/Fumo immunoaffinity column. Wash the column with 3 mL of water. Toxins are eluted with 3 mL of Methanol. The solution is evaporated to dryness and reconstituted in 0.25-2.5 mL of Methanol.

ACKNOWLEDGEMENT:

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Single Run Analysis of Deoxynivalenol , Aflatoxins, Ochratoxin A, Zearalenone and Fumonisin by HPLC and Post-column Derivatization

Analytical Conditions

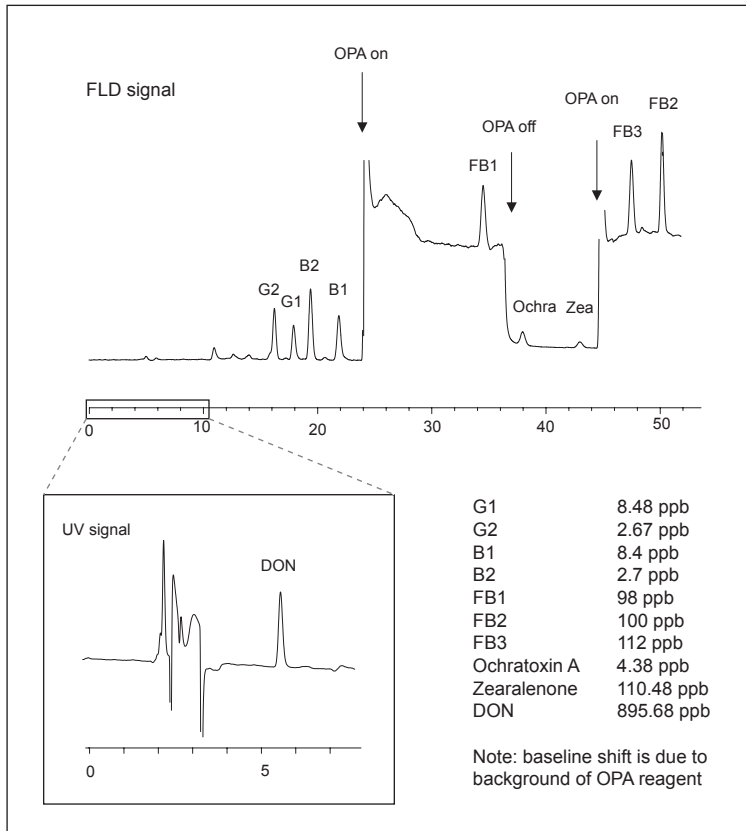
COLUMN: MYCOTOX™
reversed-phase C18, 4.6 x 250 mm
Catalog No. 1612124
TEMPERATURE: 40° C
FLOW RATE: 1.0 mL/min
MOBILE PHASE: • Acetonitrile
• Methanol
• Phosphate buffer (pH 3.3)

Post-column Conditions

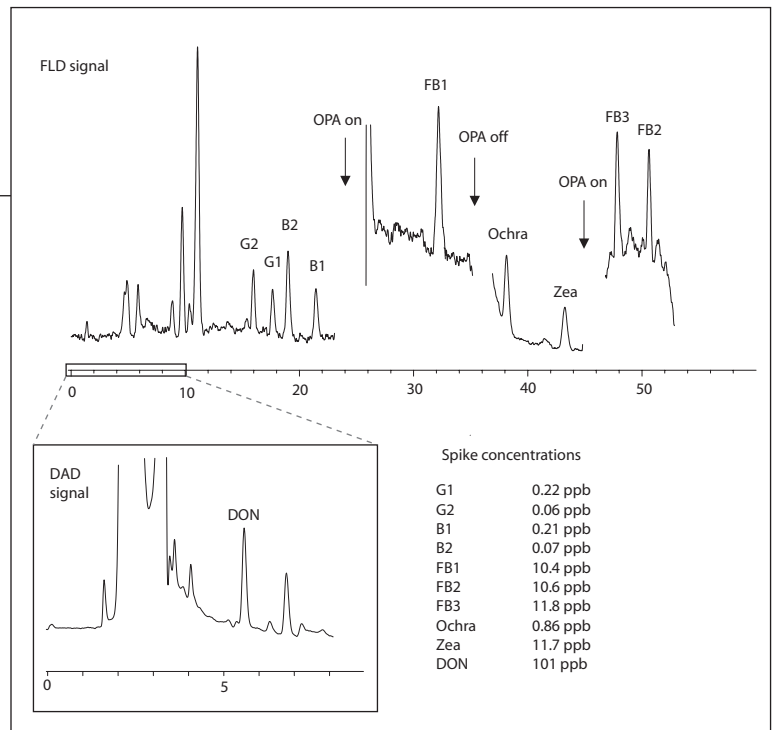
POST-COLUMN SYSTEM: PCX5200 with 1.4 mL reactor
TEMPERATURE: 60° C
REAGENT: OPA, Thiofluor in GA104
DETECTION: • DON
DAD 218 nm
• Aflatoxins (Photochemical derivatization)
Fluorescence
 λ_{ex} : 365 nm λ_{em} : 455 nm
• Ochratoxin A
Fluorescence
 λ_{ex} : 335 nm λ_{em} : 455 nm
• Zearalenone
Fluorescence
 λ_{ex} : 275 nm λ_{em} : 455 nm
• Fumonisin (post-column derivatization
with OPA)
Fluorescence
 λ_{ex} : 330 nm λ_{em} : 465 nm

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Mycotoxin Calibration Standard



Rice Wine Sample Spiked with Mycotoxins



Corn Sample Naturally Contaminated with Aflatoxins and Fumonisin

