PICKERING LABORATORIES
CATALYST FOR SUCCESS

ANALYSIS OF FUMONISINS FB1, FB2 AND FB3 USING HPLC WITH POST-COLUMN DERIVATIZATION

Fumonisins are a group of naturally occurring Mycotoxins produced by *Fusarium moniliforme* fungi species that grow on corn and other commodities. Fumonisins are suspected human carcinogens and are toxic to pigs, poultry and horses. Environmental factors, such as temperature and humidity, affect the occurrence of Mycotoxins and contamination can happen in the field as well as during storage. Many countries set limits on the presence of Fumonisins in foods and feeds and testing of raw crops as well as finished products is done on a regular basis.

A simple and sensitive method to detect Fumonisins involves using an HPLC to separate the toxins and then converting them using post-column derivatization with OPA into highly fluorescent derivatives.

METHOD

Analytical Conditions

Column: Mycotox™ reversed-phase C_{18}, 4.6 x 250 mm, Catalog Number 1612124

Column Temperature: 65 °C

Flow Rate: 0.8 mL/min

Mobile Phase: Formic acid solution (1 mL formic acid in 1000 mL D.I. water) : MeOH. See HPLC Program table

Post-column Conditions

Post-column System: Pinnacle PCX

Reactor Volume: 1.4 mL

Reactor Temperature: 65 °C

Flow Rate: 0.4 mL/min

Reagent: 300 mg o-Phthalaldehyde, 2g Thiofluor and 3 mL of 30% Brij 35 solution in 950 mL OD104 Diluent

Detection: FLD detector, λ_{EX}=335 nm, λ_{EM}=440 nm

Injection Volume: 10-50 uL

HPLC PROGRAM		
TIME, MIN	FORMIC ACID SOLUTION, %	METHANOL, %
0	45	55
2	45	55
9	30	70
14	10	90
16	10	90
16.1	45	55
23	45	55

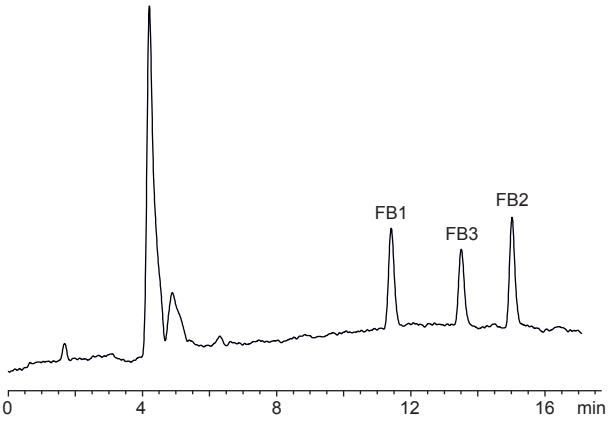

Fig 1: Chromatogram of Fumonisins standard (25 ppb)

1280 Space Park Way / Mountain View, CA 94043
sales@pickeringlabs.com / support@pickeringlabs.com
800-654-3330 / 650-694-6700 / Fax: 650-968-0749