Matrix of the Month

Ramtilla Seed

September 2016

Aflatoxin B/G in Ramtilla *(Guizotia Abyssinica)* - manual and automated -

Do you have a special matrix that we should test for mycotoxins? Please let us know and write an e-mail to: mycotoxins@LCTech.de

Sample Preparation

MYCOTOXINS

Ramtilla *(Guizotia Abyssinica)*

Ramtilla is a composite plant of the family Asteraceae and is used in Ethiopia as a fodder plant. Through the massive occurence of aflatoxin B1 in June and November 2015 in milk products, it was discovered that this happened because of aflatoxin contaminated feed, which was caused by ramtilla and press cakes of seeds thereof. Consequently many shops changed from fresh milk to imported and powdered milk, so the capital city Adisabeba lost a significant amount of turnover in dairy sector (Food control 59; p773-779; 2016).

Easy, Fast & Reliable

Automated Processing with FREESTYLE SPE

In almost every analytical laboratory, samples are routinely cleaned via SPE columns in order to obtain clean solutions for subsequent analysis or analyte concentration. The automation with FREESTYLE SPE is the perfect solution to simplify these routine working steps, to obtain the reproducibility of the results, and to receive good recoveries.

Each manual SPE method which has already proven of value in the laboratory can be automated in a quick and easy manner. The application fields are wide: from mycotoxin and environmental analysis up to forensic applications and samples of doping control.

Equip the racks with your samples, configure the required method in the easy to operate software and press the start button. From now on the processing is taken over by the FREESTYLE system.

FREESTYLE SPE with EVAporation-Module

Matrix of the Month

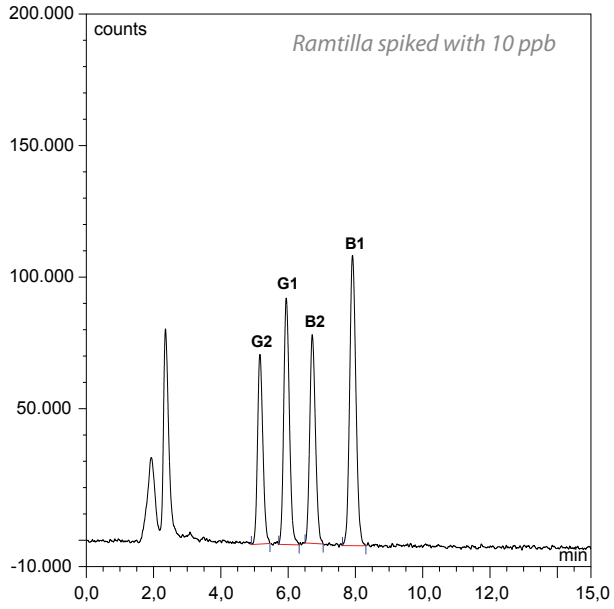
Protocol of Manual Processing

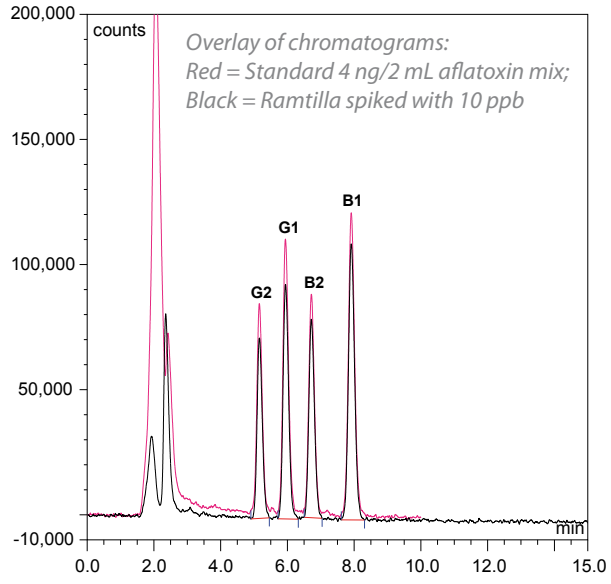
Homogenise 10 g ramtilla (guizotia abyssinica) and add 1 g of sodium chloride. Extract the sample with 50 mL methanol/ water (80/20 (v/v)) and 25 mL n-hexane to remove fat and oils. The extraction should be conducted for 20 minutes.

Filtrate the crude extract and dilute 2 mL with 12 mL PBS (contains 8 % tween20). Load the sample onto the immunoaffinity column AflaCLEAN and wash the column with 10 mL water.

Dry the column and elute the toxin with 2 mL methanol. Keep in mind that the column bed is incubated with methanol for at least 5 minutes in order to ensure the complete denaturation of the antibodies.

Chromatograms





HPLC-Conditions
(Aflatoxin B/G)

HPLC:	isocratic
Column Oven:	36 °C
Separation Column:	RP C-18 (P/N 10544)
Flow Rate:	1,2 mL/min
Eluent:	HPLC-Water/Methanol/ Acetonitrile (40/55/5 (v/v/v))
Fluorescence Detection:	Derivatisation with UVE Photochemical Reactor
Excitation Wavelength:	365 nm
Emission Wavelength:	460 nm

Recovery Rates
Content of Aflatoxin B/G in Ramtilla (Guizotia Abyssinica)

Aflatoxins	**B1**	**B2**	**G1**	**G2**
Standard*	100	100	100	100
Recovery Rate Ramtilla, 10 ppb**	93	93	87	87

**Standard is set = 100 %, **Corrected with non-spiked sample/
The results correspond to the performance specifications of EC 401/2006 (Section 4.3.1)

Immunoaffinity Column AflaCLEAN

These LCTech products were used:

AflaCLEAN,
Immunoaffinity Columns for Aflatoxins B/G
P/N 10514 / 11721

UVE Photochemical Reactor,
P/N 10519

FREESTYLE, Robotic System
for automated Sample Preparation
P/N 12663 / 12668

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