

# Matrix of the Month

September, 2013:  
**Aflatoxins B/G**  
**in Corn Silage**



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

## Protocol

20 g sample are mixed with 2 g sodium chloride, 100 mL 80/20 methanol/water and 50 mL n-hexane (cooled before to -20 °C) are added, stir strongly for 10 minutes.

After filtration the lower phase (n-hexane free) is used, 2 mL are mixed with 12 mL PBS/Tween (8 %) and added onto the immunoaffinity column AflaCLEAN.

The column is washed with 10 mL water and dried. The toxin is eluted with 2 x 1 mL methanol. The first milliliter methanol should incubate on the column bed for 5 minutes.

The eluate is collected, diluted to the conditions of the HPLC mobile phase and analysed via HPLC.

## HPLC Conditions

HPLC: Dionex Ultimate 3000, isocratic

Column oven: 36 °C

Separation column: Mycotoxin HPLC column with guard

Flow rate: 1.2 mL/min (water/methanol/acetonitrile (60/30/15 (v/v/v)))

Fluorescence detection with post column derivatisation (photochemical with UVE)

Excitation wavelength: 365 nm

Emission wavelength: 460 nm

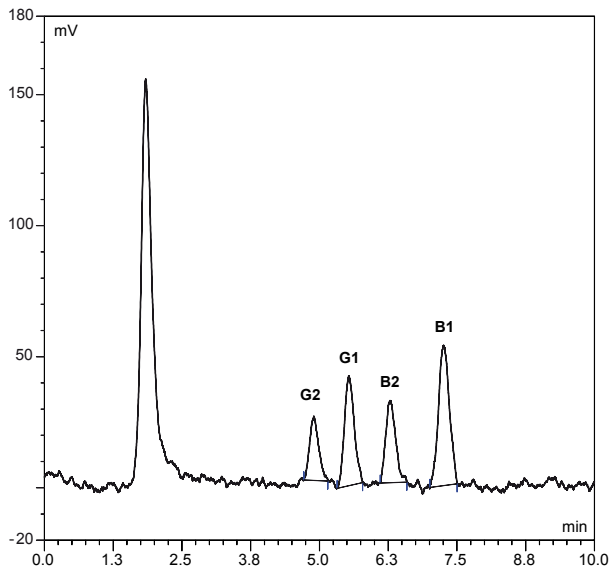
## Recovery Rates

Contents of Aflatoxins B1, B2, G1 and G2 in corn silage				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Corn silage 10 ppb	97	95	100	87

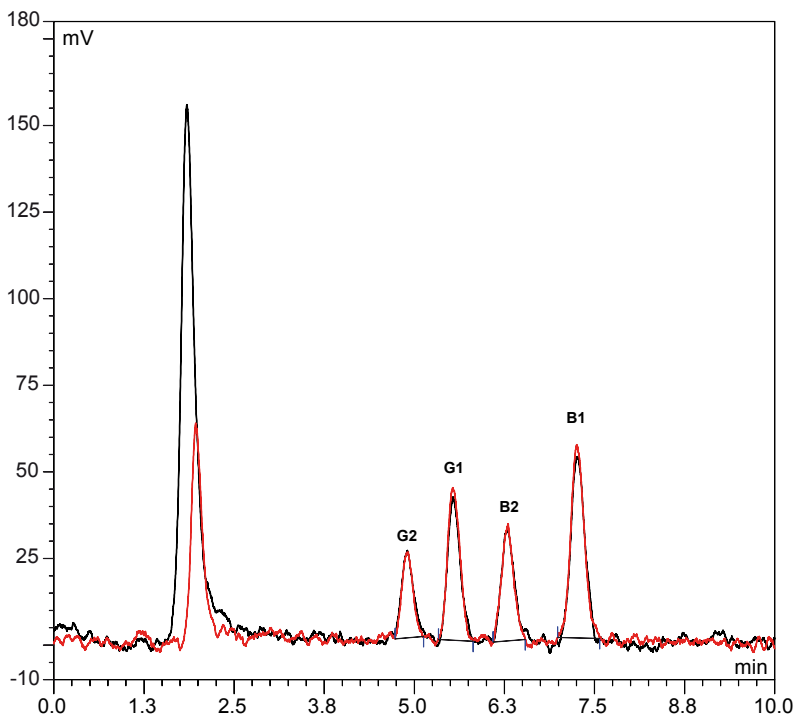
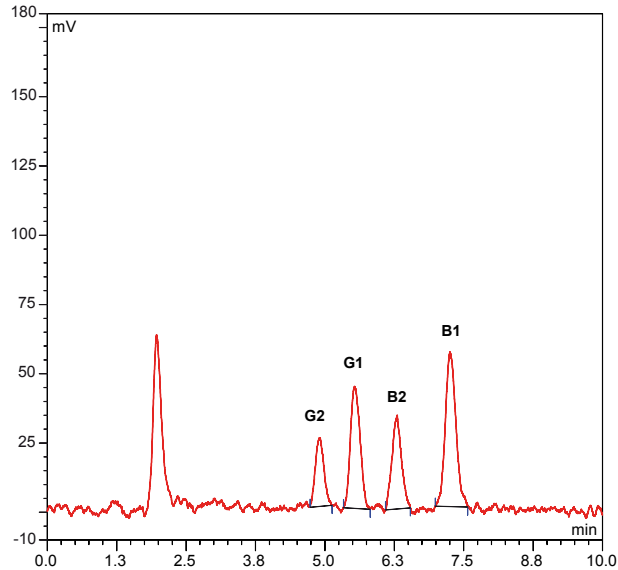
\* Standard is set = 100 % , \*\* corrected with non-spiked sample

Chromatograms

Standard, 10 ppb (4ng/2mL)  
representing 100 %



Corn silage, spiked  
with 10 ppb total toxin



Overlay of the chromatograms

These LCTech products  
were used:

AflaCLEAN,  
Immunoaffinity column  
for the Aflatoxins B1, B2, G1, G2

P/N 10514

UVE,  
Photochemical reactor  
for the analysis of Aflatoxins

P/N 10519

HPLC column,  
for the analysis of Aflatoxins

P/N 10522

Do you have further questions?  
Please simply write an e-mail to [info@LCTech.de](mailto:info@LCTech.de)