Waters™

Applikationsbericht

Aflatoxins in Red Pepper

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

Abstract

In this application brief, we determine aflatoxins in red pepper.

Introduction

Aflatoxins are naturally occurring mycotoxins. Aflatoxins often cause disease even when ingested in minute amounts and are most commonly known for causing acute, or chronic liver disease, and liver cancer.

Experimental

Pretreatment

1. Weigh 50 g ground sample with 5 g sodium chloride and place in blender jar.

2. Add 100 mL 80:20 methanol: water (v/v) to jar.

3. Blend at high speed for 1 minute.

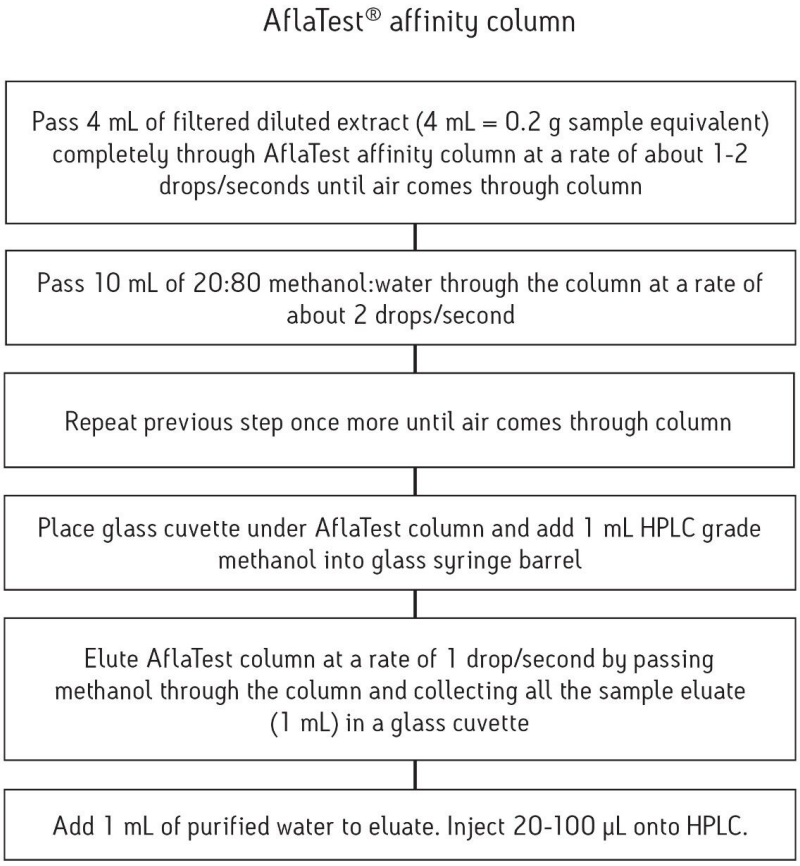
4. Filter extract with fluted filter paper. Collect filtrate in a clean vessel.

5. Pipette or pour 65 mL filtered extract into a clean vessel.

6. Dilute extract with 60 mL of phosphate buffer saline. Mix well.

7. Filter extract through glass microfiber filter into a clean vessel.

SPE Procedure

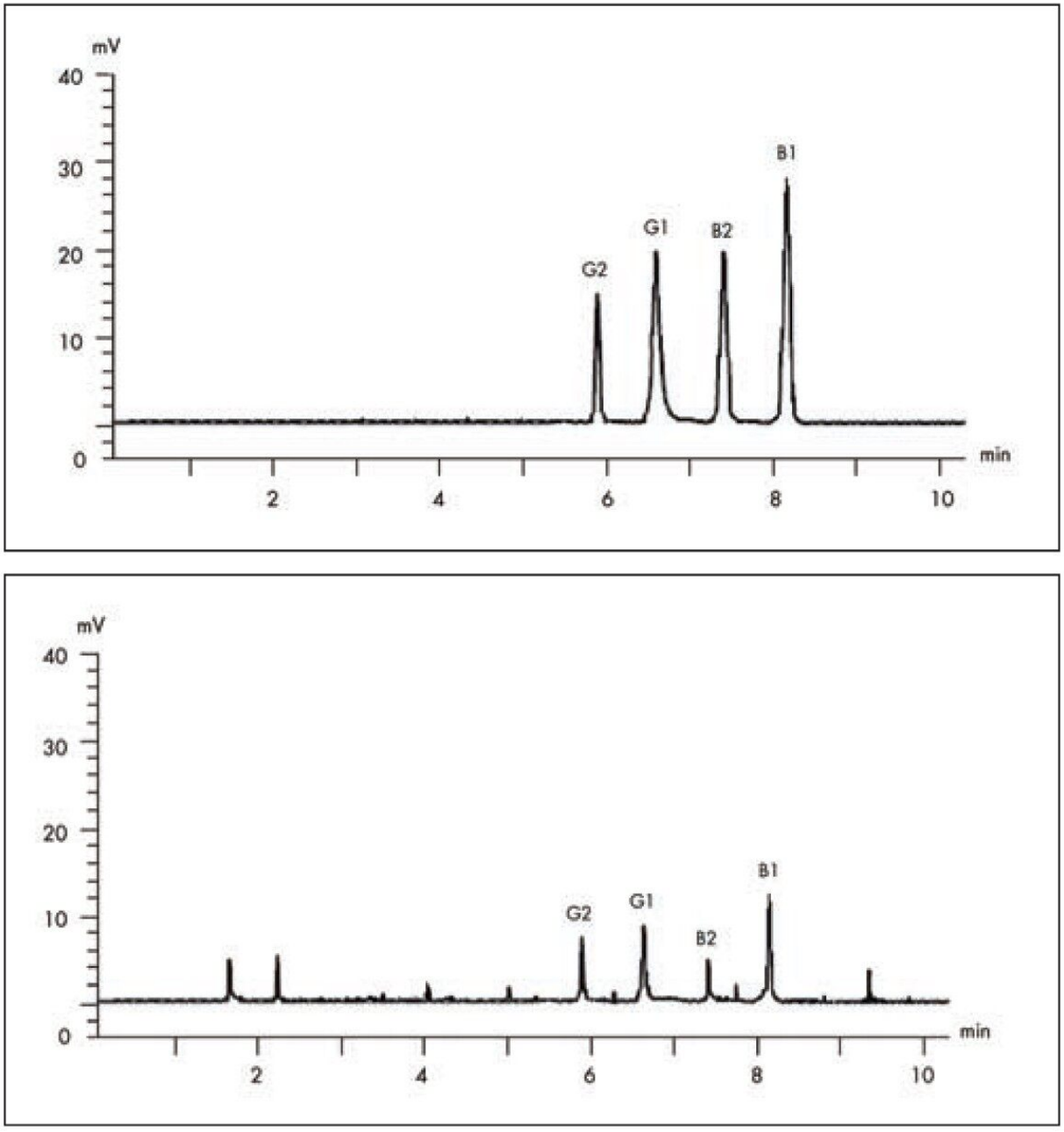


LC Conditions

System:	Alliance HPLC
Column:	XBridge C_{18}, 5 µm, 4.6 x 250 mm
Flow rate:	1 mL/min
Mobile phase:	Acetonitrile/water/methanol (17:54:29, v/v/v)
Injection volume:	100 µL
Detector:	2475 Multi Wavelength Fluorescence

Detection:	Excitation Wavelength: 333 nm Emmission Wavelength: 460 nm

Results and Discussion



Chromatogram of aflatoxins in red pepper extract. Recovery: 76% at 20 ppb (7B1:1B2:3G1:1G2 aflatoxin mix).

Action Levels for Aflatoxins

Food Stuff	Level	Regulation
All products - except milk - designated for humans	20 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Milk	0.5 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Corn for immature animals and dairy cattle	20 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Corn for breeding beef cattle, swine and mature poultry	100 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Corn for finishing swine	200 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Corn for finishing beef cattle	300 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
Cottonseed meal (as feed ingredient)	300 ng/g	Policy Guides 7120.26, 7106.10, 7126.33
All feedstuff other than corn	200 ng/g	Policy Guides 7120.26, 7106.10, 7126.33

United States (FDA) action levels (B1, B2, G2, G2, M1)

Aflatoxin regulatory action limits.

Featured Products

Alliance HPLC System <https://www.waters.com/534293>

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