Analysis of Glyphosate in Water with Postcolumn Derivatization using HPLC

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Food

Abstract

The HPLC method presented here was used for the direct analysis of glyphosate in water with postcolumn derivatization.

HPLC method performance

Limit of detection 1ppb

Repeatability
of RT over 10 runs <0.8 %
of areas over 10 runs <2.2 %

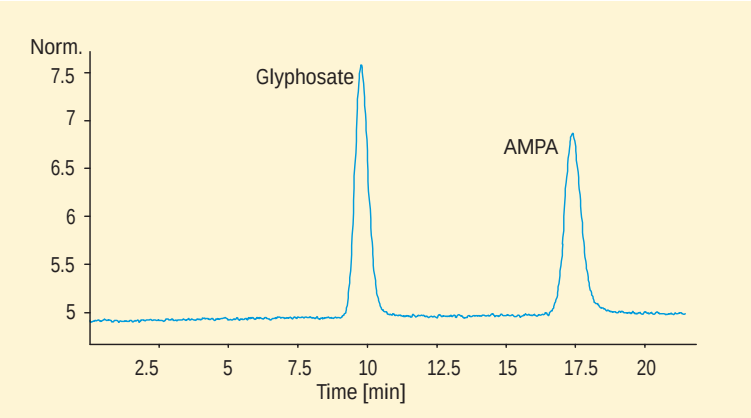

Figure 1
EIC traces from amine standards

Conditions

Column 150 ˘ 4 mm cation exchange, K+ form from Pickering, 8 µm
Mobile phase
A = 5 mM KH_2PO_4, pH = 2.0,
B = 5 mM KOH
Flow rate 0.4 ml/min
Gradient
at 15 min 0% B; at 17 min 100% B
Column compartment 55 °C
Injection vol 50 µl standard
Fluorescence detector
Excitation wavelength: 230 nm or 330 nm,
Emission wavelength: 425 nm
Slit width excitation: 2 mm (25 nm)
Slit width emission 1: 4 mm (50 nm)
Slit width emission 2: 4 mm (50 nm)
Photomultiplier gain: 2
Cut-off filter: 370 nm
Lamp: 55 Hz (always on)
Response time: 4 s
Derivatization reagent pump
flow rate for hydrolization agent:
0.3 ml/min (OCI-)
flow rate for derivatization agent:
0.3 ml/min (OPA).

Sample preparation
None

Agilent Technologies
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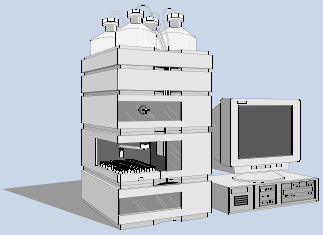
Equipment

Agilent 1100 Series

- degasser
- quaternary pump
- autosampler
- Pickering post-column derivatization system
- fluorescence detector,

Agilent ChemStation + software



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