

Acidic Herbicides in Drinking Water Using Xterra Column

Waters Corporation



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

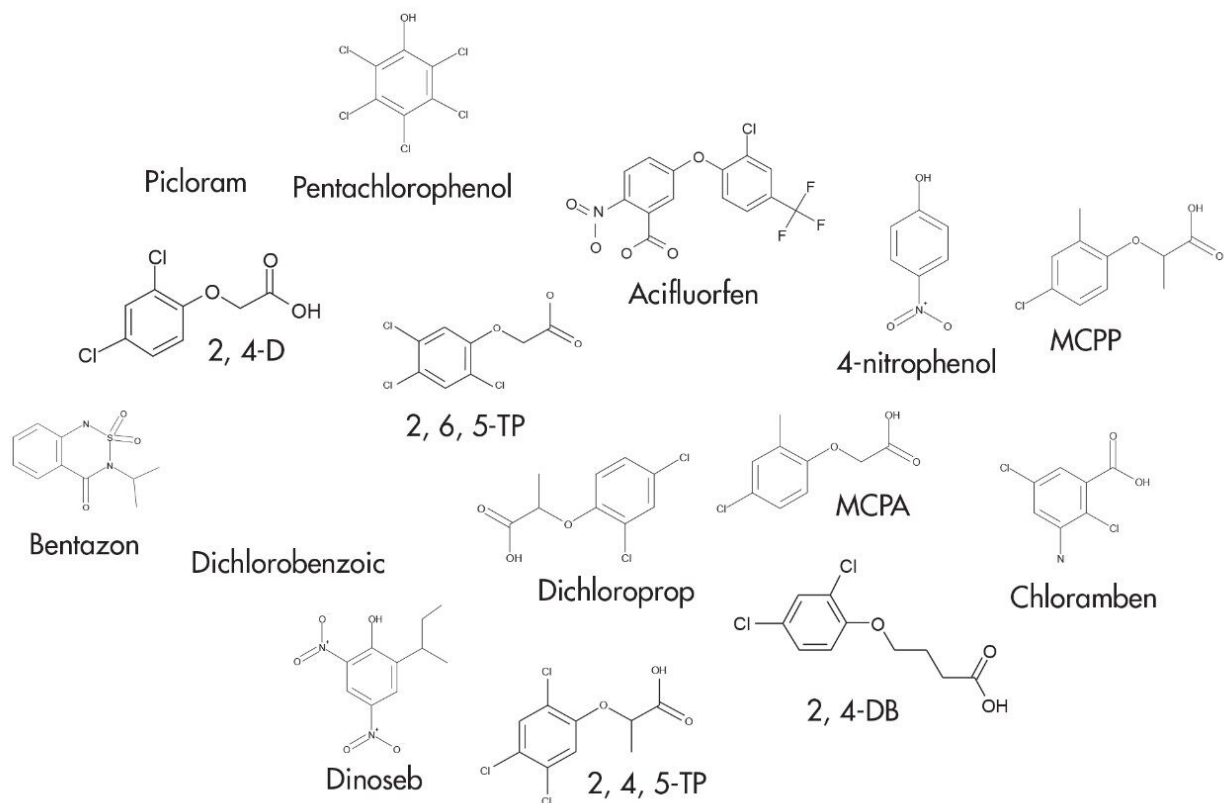
Abstract

This application brief demonstrates analysis of acidic herbicides in drinking water.

Introduction

The compounds used in this study are –

1. Picloram
2. Chloramben
3. 4-nitrophenol (non-linear above 500)
4. Bentazon (non-linear above 300)
5. 2, 4-D
6. MCPA
7. 2, 4, 5-TP
8. Dichloroprop
9. MCPP
10. Dichlorobenzoic
11. Acifluorfen (non-linear above 300)
12. 2, 6, 5 -TP
13. 2, 4-DB
14. Dinoseb (non-linear above 200)
15. Pentachlorophenol



Compounds.

Experimental

Conditions

Column:	Xterra MS C ₁₈ 2.1 x 100 mm, 3.5 µm
Part number:	186000404
Mobile phase A:	15 mM NH ₄ COOH, pH 3.4
Mobile phase B:	ACN
Flow rate:	0.2 mL/min to MS

Injection volume: 20 µL

Detection: MS ESI-

Instrument: Alliance 2695, Micromass ZQ

Gradient

Time (min)	Profile	
	%A	%B
0.0	75	25
9.0	40	60
14.0	40	60
30.0	10	90

Oasis® MAX SPE Method
for Acidic Herbicides
Conditions for Oasis® MAX Cartridge, 6 cc, 150 mg
Part Number 186000369

Sample is first hydrolyzed at pH 12 for 60 min. Then, pH is adjusted to approx. neutral with HCl before SPE.

Prepare Sample

Condition:
3 mL methanol/ 3 mL water

Load:
300 mL sample

Wash #2 (methanol) will contain bases and neutrals retained by reversed-phase interaction. This fraction may be analyzed for those compounds if desired.

Wash #1:
3 mL 50 mM NaOAc (pH 7.5)

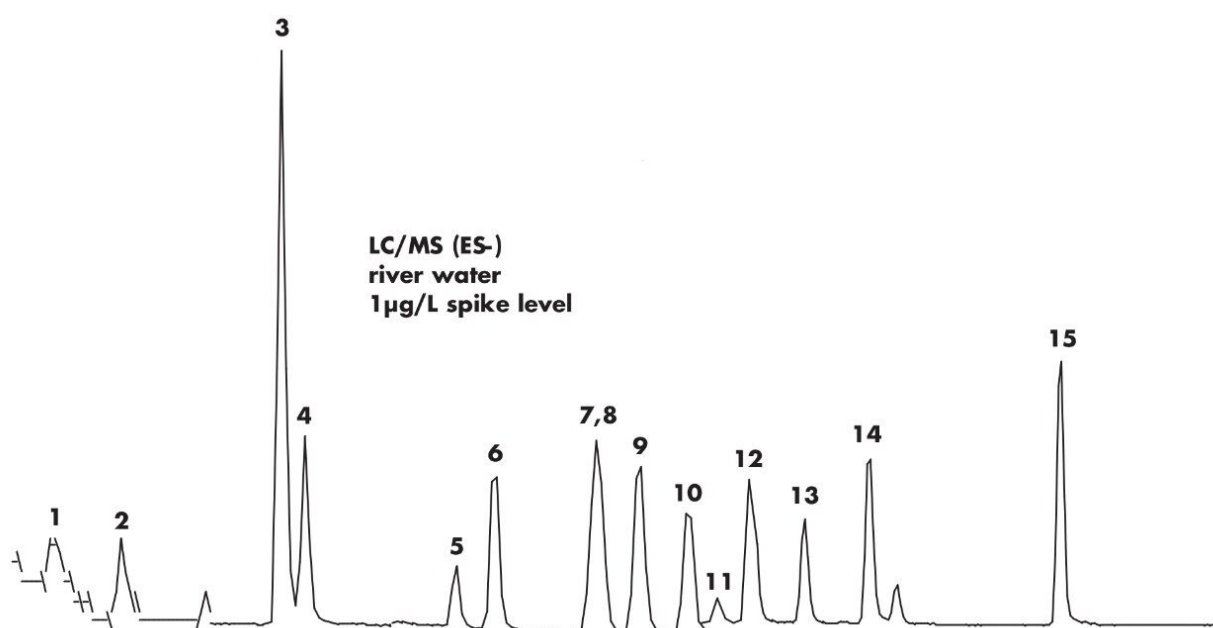
Elute 1 (Wash #2):
4 mL methanol

Analytes with $pK_a < 3$ require strong acid (i.e. trifluoroacetic) at this step.

Elute 2*:
4 mL methanol(2 % TFA)

Evaporate and Reconstitute

Results and Discussion



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