Acidic Herbicides in Drinking Water

Conditions

Column: XTerra® MS C18 2.1 x 100 mm, 3.5 µm
Part Number: 186000404
Mobile Phase A: 15 mM NH4COOH, pH 3.4
Mobile Phase B: ACN
Gradient: Time Profile

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>%A</th>
<th>%B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>75</td>
<td>25</td>
</tr>
<tr>
<td>9.0</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>14.0</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>30.0</td>
<td>10</td>
<td>90</td>
</tr>
</tbody>
</table>

Flow rate: 0.2 mL/min to MS
Injection Volume: 20 µL
Detection: MS ESI-
Instrument: Alliance® 2695, Micromass® ZQ™

Compounds:
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

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

Prepare Sample
Condition:
3 mL methanol/ 3 mL water
Load:
300 mL sample
Wash #1:
3 mL 50 mM NaOAc (pH 7.5)
Elute 1 (Wash #2):
4 mL methanol
Elute 2*:
4 mL methanol(2 % TFA)
Evaporate and Reconstitute

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

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

Compounds with pKₐ < 3 require strong acid (i.e trifluoroacetic) at this step.

Evaporate and Reconstitute

LC/MS (ES-) river water 1µg/L spike level