

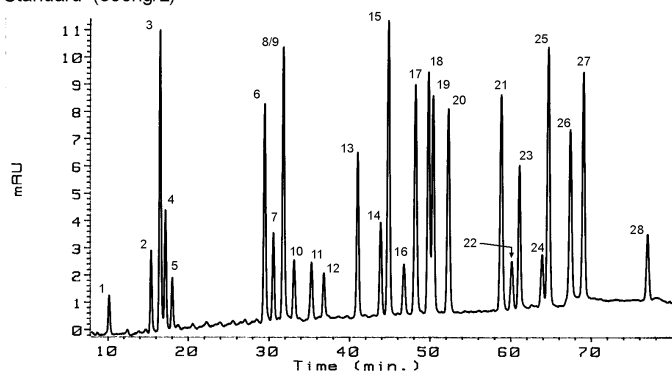


Pesticides

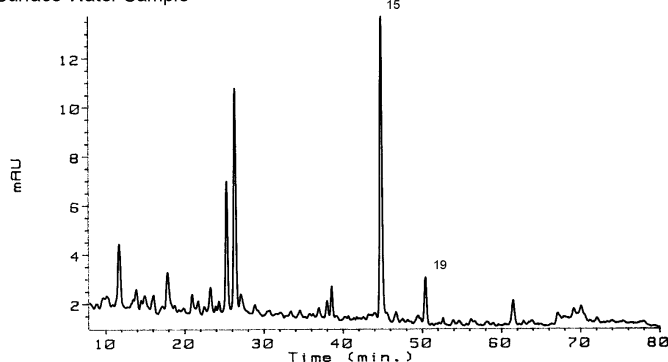
Analysis of Pesticides in Drinking Water

Application
Environmental
Robert Ricker

Standard (500ng/L)



Surface Water Sample



Courtesy of Dr. rer.nat. Claus Schlett, Gelsenwasser AG

1. Desisopropylatrazine
2. Metamitron
3. Fenuron
4. Chloridazon
5. Desethylatrazine
6. Metoxuron
7. Carbetamid
8. Bromacil
9. Hexazinon
10. Simazine
11. Metribuzin
12. Desethylterbutylazine
13. Carbutilat
14. Methabenzthiazuron
15. Chlortoluron
16. Atrazine
17. Monolinuron
18. Diuron
19. Isoproturon
20. Metobromuron
21. Metazachlor
22. Buturon
23. Propazine
24. Dimefuron
25. Terbutylazine
26. Linuron
27. Chlorbromuron
28. Chloroxuron

Highlights

- The 3mm-diameter ZORBAX Low-Volume Columns offer significant advantages over standard 4.6 mm i.d. columns:
 - A 2-fold increase in detection sensitivity -- less sample required
 - A 50% solvent savings -- and reduced solvent-disposal costs
- ZORBAX SB-C18 has a sterically protected bonded phase that permits reliable results run after run.
- 28 pesticides are separated with good resolution and peak shape in a single run using simple mobile phases.

Conditions:

ZORBAX SB-C18 (3.0 x 250 mm) (Agilent P/N: 880975-302)
Mobile Phase: A=2mM Sodium Acetate (pH 6.5) with 5% ACN
B=100% Acetonitrile (ACN)
Gradient Elution: 2min, 10% B; 10 to 45% B in 70 min.
Injection volume 25µl, 0.35 mL/min, 40°C, Detect. UV (245 nm)



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SUMMARY

A variety of pesticides have had extensive use in many countries around the world over the last twenty years. These chemicals are currently present in surface water in very low concentrations, and need to be analyzed. High-Performance Liquid Chromatography with diode-array detection is an excellent tool for analysis of these compounds.

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TECHNICAL DETAILS

Drinking-water regulations have been developed in many locations that set limits for maximum allowable levels of pesticides. A reliable method of analysis is required to monitor these levels, preferably in a single run. HPLC using diode-array detection after solid-phase extraction can meet this need. Generally, substances can be detected in concentrations less than 0.1 mg/L (i.e., the maximum level set in the drinking-water regulation of Germany).

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ACKNOWLEDGMENT

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