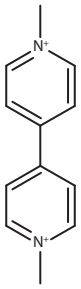
POLAR PESTICIDES BY LC-MS/MS

Introduction

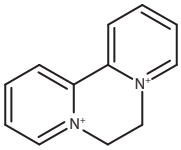
Polar pesticides are commonly used in agriculture. This application shows the LC-MS/MS method for simultaneous determination of highly polar pesticides paraquat, diquat, chlormequat and mepiquat.

Substance: Paraquat, CAS number 4685-14-7
Synonym: 1,1'-Dimethyl-4,4'-bipyridinium
Substance: Diquat, CAS number 2764-72-9
Synonym: 1,1'-Ethylene-2,2'-bipyridylium ion
Substance: Chlormequat, CAS number 7003-89-6
Synonym: 2-Chloro-N,N,N-trimethylethanaminium
Substance: Mepiquat, CAS number 15302-91-7
Synonym: 1,1-dimethylpiperidinium

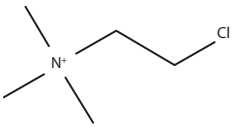
Instrument	Bruker EVOQ ELITE LC-TQ
Column	Raptor Polar X, 2.7 µm
Dimensions	100 mm × 2.1 mm
Part number	9311A12
Mobile phase	A: 20mM ammonium formate (pH=3) in water B: water : 20mM ammonium formate (pH=3) in ACN 10/90 (v/v)
Gradient elution	Time A (%) B (%) 0 5 95 2 5 95 6 50 50 9 50 50 9.1 5 95 12 5 95
Flow rate	0.300 mL/min
Temperature	30 °C
Detection	MS/MS
Analytes	See LC-MS/MS method
Collision gas	Argon



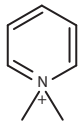
1. Paraquat



2. Diquat



3. Chlormequat



4. Mepiquat

Validation parameters	Paraquat	Diquat	Chlormequat	Mepiquat
LOD, µg/L	0.7	0.5	0.6	1.0
LOQ, µg/L	2.2	1.7	1.9	3.3

* The values given are for solid matrices - sediments, soils, sludges.

Author of this application:
Ohře river basin, state enterprise.

Povodí Ohře

CHROMSERVIS

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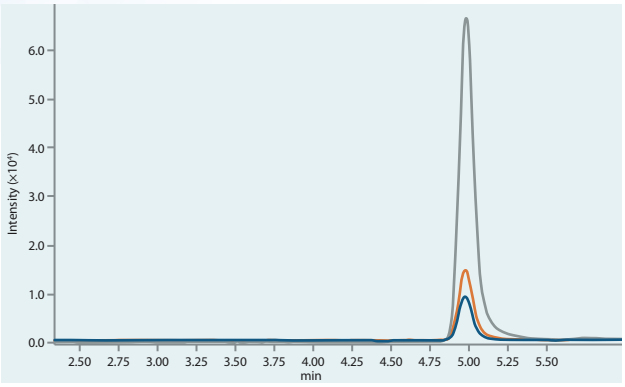
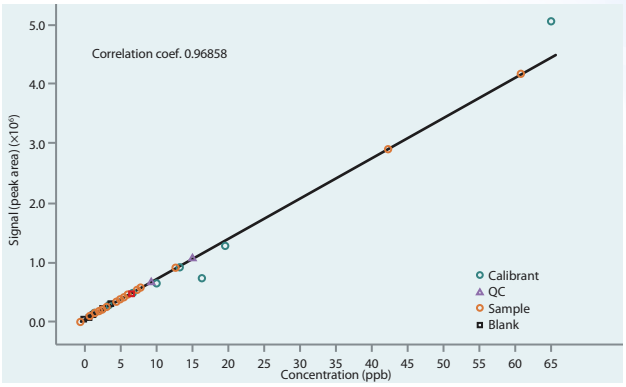
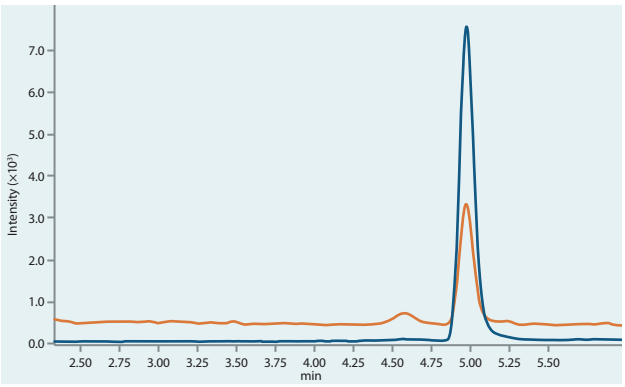
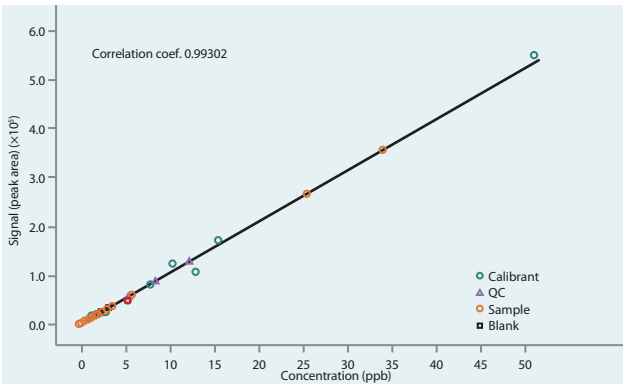


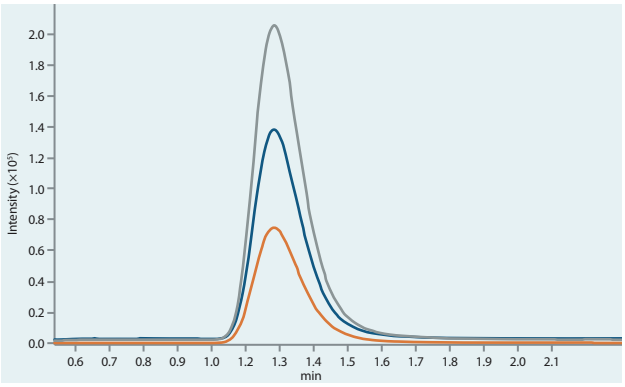


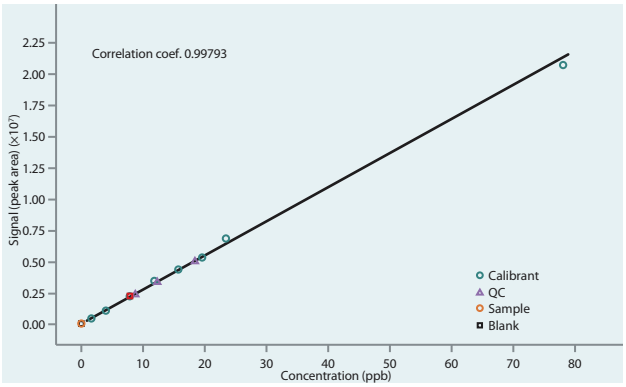
Paraquat (+) Qualifier 185.0 > 170.0, Quantifier 186.0 > 171.0 [10.0V]



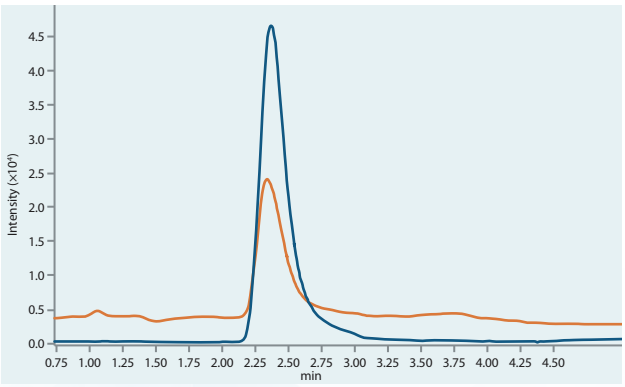


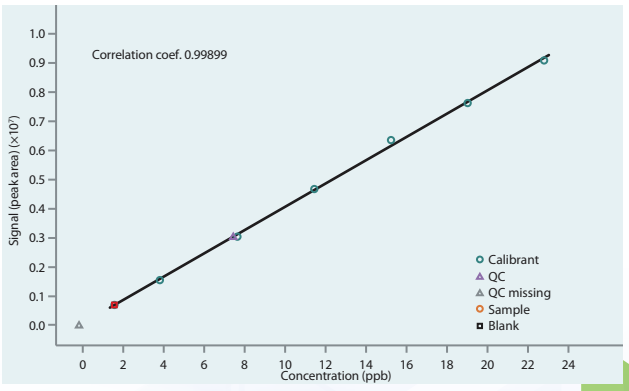
Diquat (+) Qualifier 183.0 > 168.0, Quantifier 183.0 > 157.0 [15.0V]





Chlormequat (+) Qualifier 122.0 > 63.0, Quantifier 122.0 > 59.0 [15.0V]





Mepiquat (+) Qualifier 115.0 > 58.0, Quantifier 114.0 > 98.0 [20.0V]