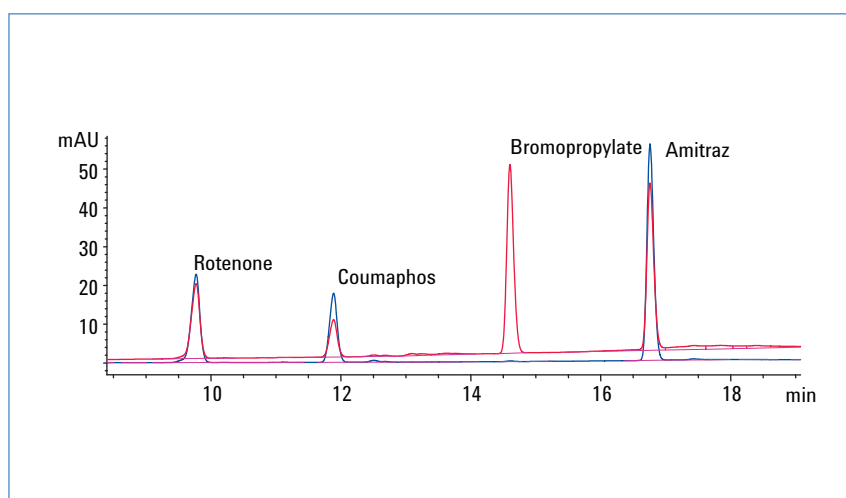


Analysis of acaricides in honey



Abstract

- Method development
- Method validation
- Sample preparation
- Real-life sample analysis

Varroosis is a bee disease caused by the mite *Varroa Jacobsoni* which endangers beekeeping all over the world. In order to prevent economic losses beekeepers treat their colonies with acaricides. The use of these acaricides inside beehives implies a risk of direct pollution of honey and other hive products, therefore maximum residue levels (MRLs) on honey have been fixed in many countries to protect consumers. This Application Solution describes an HPLC method that was developed and validated for four acaricides – Rotenone, Coumaphos, Bromopropylate and Amitraz – using the Agilent 1260 Infinity LC system. Further, a UHPLC method was developed using the Agilent 1290 Infinity LC system, saving time and solvent consumption and resulting in better sensitivity.



Scope and Benefits

Acaricides are widely used to keep the infection with *Varroa Jacobsoni* under control. Rotenone, Coumaphos, Bromopropylate and Amitraz are frequently used. The use of these pesticides implies the risk of contamination of consumer products such as honey and other beehive products. Therefore, many countries have set maximum residue limits (MRL) to reduce the health risk for consumers.

Two norms were defined in ECC Regulation: 2377/90 for Coumaphos and Amitraz: 0.1 and 0.2 mg/kg respectively.

Analytes

Rotenone, Coumaphos, Bromopropylate, Amitraz

Matrix

Honey

Ordering Information



Agilent 1260 Infinity Binary LC

Description

- 1260 Infinity Binary Pump
- 1260 Infinity Vacuum Degasser
- 1260 Infinity Standard Autosampler with Thermostat
- 1260 Infinity Thermostatted Column Compartment
- 1260 Infinity Diode Array Detector

Part Number

G1312B
G1379B
G1329B
G1330B
G1316A
G4212B

Agilent 1290 Infinity LC

Description

- 1290 Infinity Binary Pump with integrated vacuum degasser
- 1290 Infinity High Performance Autosampler with Thermostat
- 1290 Infinity Thermostatted Column Compartment
- 1290 Infinity Diode Array Detector

Part Number

G4220A
G4226A
G1330B
G1316C
G4212A

Software

Agilent ChemStation B.04.03 or higher

Columns

Description

ZORBAX Eclipse Plus 4.6 x 150 mm, 5 µm
ZORBAX Eclipse Plus 2.1 x 50 mm, 1.8 µm

Part Number

95993-902
959757-902

Chemicals

HPLC grade solvents
All chemicals were purchased from regular suppliers

For full details of this application see
Agilent Application Note 5990-8717EN

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