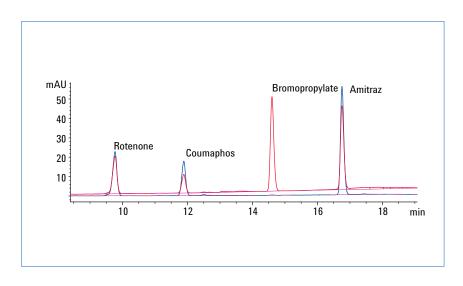


Analysis of acharicides in honey



Method development

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

Abstract

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



G1312B

G1379B

G1329B

G1330B

G1316A

G4212B

Part Number

95993-902

959757-902

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

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

Chemicals

HPLC grade solvents

All chemicals were purchased from regular suppliers

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

www.agilent.com/chem/lc

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

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