Determining residues of Bromopropylate, Coumaphos and Fluvalinate in Lebanese Honey after 12 years of treatment against varroatoses

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Abstract

The parasitic mite Varroa jacobsoni Oudemans is present in Lebanon since 1982, numerous chemicals were used to control it. The most commonly used are Bromopropylate, Coumaphos, Amitraz and Fluvalinate. Since 1988, Fluvalinate has been the most widely used on hand-made wooden sticks.

A total of 31 lebanese honey samples are analysed for residues using Gas Liquid Chromatography. Recovery rates of 78% to 94% were obtained and detection limits of 0,05 ppb are reached. The number of samples with residues on ppb-level was 6 for Fluvalinate, 1 for Coumaphos, 1 for Bromopropylate and 2 for Dibromobenzophenone.

Materials and methods

A total of 31 honey samples 94 and 95 yield are collected from different regions of the country. A sample of honey dating from 1978 is analysed as blank.

Bromopropylate certified, dibromobenzophenone certified, coumaphos certified and fluvalinate certified from Dr Ehrenstorfer GmBH are used to prepare the standard solutions. A Shimadzu GC-17A gaz chromatograph is used with N2 carrier gaz and a Chromatopac C-R7A Plus Shimadzu integrator. Capillary column PTE-5 from supelco with a stationnary phase SE-54. Electron capture detector ECD Ni63 with a detection limit of 0.1pg/s.

Solid phase extraction tubes (SPE) Florisil LC-FL 3 ml, 500 mg, Supelco and Reversed phase LC-18, 3ml, 500mg Supelco.

n-Hexane, Ethanol, Ethyl acetate and dichloromethane are used as reagents.

The method is described by Stricker et al. (1989).