EUROFINS SCIENTIFIC

NEWS

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Pesticide Residue Analysis within the Eurofins Scientific Group

Global development in the field of pesticide production and use is permanent. Several laboratories of the Eurofins Scientific group carry out pesticide analyses in various countries. The EUROFINS SCIENTIFIC PESTICIDE CENTER OF EXCELLENCE, located at Dr.Wiertz/Eggert/Dr.Jörissen GmbH (WEJ) in Hamburg, Germany, is pursuing these new developments and changes continuously and is able to offer the analysis of a wide range of goods for relevant pesticides or groups of pesticides. Even faced with a new "scandal" EUROFINS SCIENTIFIC can react quickly to give our customers the information they need to ensure the safety of their products (this was put to the test a few months ago for PCB analyses in connection with the "Dioxin" crisis).

With the help of our expert team and state of the art scientific equipment we analyse for possible residues with unrivalled sensitivity and selectivity. The use of automated techniques like Gel Permeation Chromatography, Gas Chromatography and Mass Spectrometry in combination with different clean up and enrichment steps enables us to analyse the samples as fast as possible combined with highest analytical quality.

Because of the widespread application of hundreds of pesticides the use of screening methods is normally recommended. These screening methods are also called "Multi Residue Methods" (MRM). The MRM's enable the qualitative and quantitative analysis of many pesticides simultaneously and with high precision. EUROFINS SCIENTIFIC offers some special packages for the screening of pesticides in food and feeding stuff:

PAP 1: detects around 200 substances from the following groups

- *Organochlorine Insecticides and Fungicides*
- *Organophosphorus Insecticides and Fungicides*
- *Organonitrogen Insecticides and Herbicides*
- *Pyrethroids (Insecticides)*

Method: Official German and EU method, including several clean up and enrichment steps, GPC, GC with various detectors (ECD, NPD, MSD) and if necessary, confirmation by GC/MS.
LOQ (Limits of Quantification): The sensitivity depends upon the sample matrix, but may be as low as 1 µg/kg (1 ppb).

PAP 2 – 5: PAP 1 plus another group of chemicals/pesticides on the client's request such as

- *Pyrethrins / PBO*
- *Methylcarbamates*
- *PCB's*
- *...*

Specific Pesticides

We can also use special analysis methods, e.g. for fumigants like phosphine and methylenbromide, for fungicides like the dithiocarbamates or the benzimidazoles (carbendazim/benomyl, thiabendazol etc.), and many more. Of course, all these methods are accredited by the German Accreditation System DAP according to EN 45001.

Two "Hot Topic" Pesticides are chlormequat and ethephon. Chlormequat ("CCC") is a

Plant Growth Regulator (PGR), especially used on pome fruits like apples and pears. In February 1999, there was a problem with pears from Belgium, and it is likely that official authorities will look more intensively for chlormequat in the future. The MRL (Maximum Residue Limit) in the EU is as low as 0.05 mg/kg (ppm) for many products (Guideline 96/32/EC). **WEJ/Eurofins Scientific** offers the analysis of Chlormequat, performed in accordance to an EN draft by HPLC/MS.
Ethephon is also a PGR, used to produce ethylene for faster ripeness and as a stem shortening reagent in corn agriculture to avoid stem breaking. Residues of ethephon might be a problem especially in baby and organic food (MRL 0.01 mg/kg). **WEJ/ Eurofins Scientific** offers the analysis of Ethephon, performed by Reaction Head Space GC.

For more information, call your local Eurofins Scientific contact. Details on back page.

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