



# CONFIDENCE

## - for the Honey Sector

### CONFIDENCE

CONFIDENCE is an European collaborative research project. The goal is to develop rapid and cost-efficient tests for chemical residues and contaminants in the food chain. This includes persistent methods for organic pollutants (PCBs, brominated flame retardants, polycyclic aromatic hydrocarbons, perfluorinated compounds), pesticides (paraquat/diquat, dithiocarbamates), veterinary drugs (coccidiostats, antibiotics), heavy metals (inorganic arsenic, methyl mercury) and biotoxins (alkaloids, phycotoxins, mycotoxins). The project addresses a number of different sectors (e.g. cereals, poultry, seafood, feed) among which is also the honey sector. Two major challenges of honey quality are addressed: Antibiotics and pyrrolizidine alkaloids.

### Antibiotics

Residues of antibiotics in honey are still an important issue in food safety. The development of rapid assays focusses on two formats: (i) an electrochemical immunosensor for sulfonamides, and (ii) a multiplex dipstick for four different groups of antibiotics.

#### Sulfonamides electrochemical immunosensor

The assay covers at least 12 different sulfonamides at detection levels below 25 µg/kg. Up to 16 samples can be processed in 4 h. This assay does not require a hydrolisation step.

#### Multiplex dipstick

A multiplex dipstick has been developed which covers four classes of antibiotics: Sulfonamides, chloramphenicol, tylosin, and fluoroquinolones. The dipstick can be used in two different assays. The laboratory based version is rapid and sensitive and involves a simple solvent extraction of the sample. The assay meets recommended residue limits for most analytes. The field version is very simple and rapid. It does not require a laboratory environment, but can be carried out under field conditions. The detection limits of this assay are higher as compared to the lab version, but the assay is suited to identify honey from treated hives close to the source.



### Pyrrolizidine alkaloids

Pyrrolizidine alkaloids such as lycopsamine may enter the honey from nectar of certain plants (e.g. *Senecio* spp.) which naturally produce these toxic compounds. The project aims at developing an immunochemical assay for the rapid detection of relevant pyrrolizidine alkaloids in honey. Different platforms are currently under evaluation (dipsticks, ELISAs) and the cross-reactivity profiles of the antibodies are improved to meet the needs of the honey sector.



### More information

More detailed information can be obtained from the project's website or from the coordinator.

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