



CONFIDENCE

Safer food through rapid and cost-efficient tests for chemical contaminants in the food chain

Introduction

The CONFIDENCE project (Contaminants in Food and Feed; Inexpensive Detection for Control of Exposure) aims to further improve food safety in Europe by the development of fast and cost-efficient methods for the detection of a wide range of chemical contaminants in different food and feed commodities.

The duration of the project is 48 months (May 2008 – May 2012); 17 partners from 10 countries participate, representing universities, research institutes, industry and SME's. The project is funded by the European Commission in the 7th Framework Programme.

Objectives

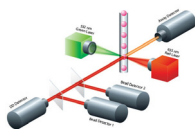
The project will deliver scientific and technical solutions for the monitoring and enforcement of food and feed safety. The major objectives are:

- To develop and validate new, simplified, inexpensive detection methods for chemical contaminants from farm to fork.
- To improve exposure assessment through monitoring of selected contaminants.
- To contribute to validation of predictive behaviour models.

Technologies

A balanced mix of novel multi-detection (multiplex) technologies will be utilized. The following advanced technologies will be applied:

- Multiplex dipsticks
- Flow cytometry with functionalized beads
- Optical and electrochemical biosensors
- Cytosensors
- Near Infrared (NIR) imaging methods
- Simplified Mass Spectrometric (MS) methods
- Automated contaminant profiling in MS data



Dissemination

The scientific and technological development of the new techniques will be widely disseminated through training workshops, scientific publications, presentations at international conferences, stakeholder workshops and education modules and training courses for under- and postgraduate students.

Targeted contaminants

The targeted analytes represent a balance of emerging contaminants, high frequency detected residues as well as compounds which are not satisfactorily covered by current analytical methods.

- Persistent Organic Pollutants (POPs): dioxin-like PCBs, brominated flame retardants and Polycyclic aromatic hydrocarbons (PAHs).
- Perfluorinated compounds (PFCs), such as PFOS, PFOA.
- Pesticides: paraquat, diquat and dithiocarbamates.
- Veterinary pharmaceuticals: coccidiostats, antibiotics.
- Heavy metals: inorganic arsenic species and methyl-mercury.
- Biotoxins: plant alkaloids, marine biotoxins and mycotoxins.

Commodities

Based on their relevance for consumer safety and trade the following target commodities were selected: fish, shellfish, fish feed, cereals, cereal-based feed, potatoes, vegetables, honey, dairy products, eggs, and meat.



Project structure

The CONFIDENCE project is organized into nine RTD work packages focusing on targeted contaminants, grouped into four R&D clusters. In addition cross-cutting discussion groups and work packages on dissemination and management provide coherence in the project.

Cluster 1: Organic pollutants			Cluster 2: Veterinary pharmaceuticals		Cluster 3: Heavy metals	Cluster 4: Biotoxins			Clusters
WP1a POPs	WP1b PFCs	WP1c Pesticides	WP2a Coccidiostats	WP2b Antibiotics	WP3 Heavy metals	WP4a Alkaloids	WP4b Marine biotox.	WP4c Mycotoxins	Work packages
									Inter-WP-discussion group on primary extraction methods*
MSA	SMS	MSA	MSA	DIP	CYT	DIP	MSA	DIP	Novel technologies to be developed**
									Inter-WP-discussion groups: (i) harmonisation of QA/QC and (ii) immunoreagents
workshop			workshop		workshop	workshop			WP 5: Dissemination and exploitation
									WP 6: Management
Contribution to policy needs; toxicological hazard and exposure assessment; predictive modeling of hazards in food and feed									Impact demonstrators

* = fish and fish feed, = feed/cereals, = potatoes/vegetables
 **MSA=multiplex screening assay, DIP= multi component dipstick assay, CYT=cytosensor, SMS = simplified MS method