



# CONFIDENCE in Food and Feed: A new European Research Project

## The facts

- Title: "Contaminants in Food and Feed: Inexpensive Detection for Control of Exposure"
- FP7 Collaborative Project
- Start date: 1 May 2008
- Duration: 48 months (2008 – 2012)
- Volume: 7.5 M €
- Participants: 17 partners from 10 countries, representing universities, research institutes, industry and SMEs
- Co-ordinator: Dr. Jacob de Jong  
RIKILT - Institute of Food Safety

## The goals

- Increased food safety through more effective chemical contaminant monitoring
- Excellent screening tools for statutory control and industry
- Simple, fast, inexpensive multiplex assays (multi-analyte multi-class detection), fully validated
- Replacement of expensive, tedious instrumental methods
- Impact demonstration, e.g. European PFC database
- Widespread dissemination of the new methods
- Training workshops: governmental and industrial end-users
- Education and training modules for students

## The commodities

Based on their relevance for consumer safety and trade the following target commodities were selected for demonstrating the applicability of the new technologies:

- Fish/shellfish, fish feed
- Cereals, cereal-based feed
- Potatoes/vegetables
- Honey, dairy products
- Eggs, meat

## The technologies

A selection of the most recent and advanced technologies will be applied:

- Multiplex flow cytometry
- Multiplex SPR biosensor
- Magneto-immunosensor
- Multi-component dipstick assays
- Cytosensor
- Simplified mass spectrometric (MS) methods
- Automated contaminant profiling in MS data

## The target contaminants

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

- Persistent Organic Pollutants (POPs):
  - dioxin-like PCBs (+ metabolites, e.g. PCB-OH)
  - brominated flame retardants
  - polycyclic aromatic hydrocarbons (PAHs)
- Perfluorinated compounds (PFCs):
  - e.g. PFOS, PFOA
- Pesticides:
  - paraquat/diquat
  - dithiocarbamates
- Veterinary drugs:
  - coccidiostats (lasalocid, monensin, salinomycin, narasin, nicarbazin)
  - antibiotics (tetracyclines, sulfonamides, chloramphenicol, tylosin)
  - malachite green
- Heavy metals:
  - inorganic arsenic species
  - methyl-mercury
- Biotoxins:
  - alkaloids (pyrrolizidine, tropane, ergot)
  - marine biotoxins (PSP/DSP)
  - mycotoxins (DON, ZEA, T-2/HT-2, fumonisins FB1, FB2)

## The project matrix

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 biotoxins	WP4c Mycotoxins	Work packages
									Inter-WP-discussion groups on primary extraction methods*
MSA	SMS	MSA	MSA	DIP	CYT	DIP	MSA	DIP	Novel technologies to be developed**
									Inter-WP-discussion group on harmonisation of QA/QC
		workshop		workshop		workshop		workshop	WP 5: Dissemination and exploitation
									WP 6: Management
									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

## Acknowledgement

The project is funded by the European Commission, call identifier FP7-KBBE-2007-1, Grant Agreement number 211326.