CON*ff*IDENCE in Food and Feed: a new European Research Project

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SEVENTH FRAMEWORK
PROGRAMME

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CONffIDENCE and MoniQA

1st MoniQA International Conference:

Increasing Trust in Rapid Analysis for Food Quality and Safety

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1st MoniQA International Conference:

Increasing Confidence in Rapid Analysis for Food Quality and Safety

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CON*ff*IDENCE and MoniQA

1st MoniQA International Conference:

Increasing **CON*ff*IDENCE** *in Rapid Analysis for Food Quality and Safety*

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Ultimate goal of CONffIDENCE

Increasing **trust** *in Food Safety*

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CON*ff*IDENCE in a nutshell

CONtaminants

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CON*ff*IDENCE in a nutshell

Chemical CONtaminants

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CONtaminants in *f*ood and *f*eed:

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CON*ff*IDENCE in a nutshell

CONtaminants in *f*ood and *f*eed:
Inexpensive DEtectioN

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CONffIDENCE in a nutshell

CONtaminants in *f*ood and *f*eed:
Inexpensive DEtectioN
for Control of Exposure

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CON*ff*IDENCE passport

- FP7 Collaborative Project first call “Food, Agriculture & Fisheries, and Biotechnology”
- Duration: May 2008 – April 2012
- 17 partners from 10 countries, representing universities, research institutes, industry and SMEs
- Volume: 7.5 Mio €
- Co-ordinator: RIKILT - Institute of Food Safety, part of Wageningen UR (NL)

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The objectives

- Development and validation of new simplified inexpensive detection methods for chemical contaminants from farm to fork
- Improved exposure assessment through monitoring of selected contaminants
- Contribute to validation of predictive hazard behaviour models
- Dissemination and training of new detection methods to all relevant stakeholders, to advance technology exploitation

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The target contaminants

- POPs: - dioxin-like PCBs + metabolites
  - brominated flame retardants
  - polycyclic aromatic hydrocarbons (PAH)
- Perfluorinated compounds
- Pesticides: paraquat/diquat, dithiocabamates
- Veterinary drugs: - antibiotics, e.g. tetracyclines
  - coccidiostats, e.g. ionophores
- Heavy metals speciation: inorganic arsenic, methyl mercury
- Biotoxins: - alkaloids
  - marine biotoxins
  - mycotoxins

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The commodities

Food	&	Feed
Fish/shellfish		Fish feed
Cereals		Cereal-based feed
Potatoes/vegetables		
Honey		
Eggs		
Meat		
Dairy products		

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The technologies (1)

Immunological methods

- Multiplex flow cytometry
- Multiplex SPR biosensor
- Multiplex dipstick assays
- Magneto-immunosensor

Bio-assays

- Cytosensors (Calux-like)

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The technologies (2)

Spectroscopic methods

- NIR image analysis

MS, LC-MS and GC-MS methods

- Simplified ambient mass spectrometric (MS) methods, viz. DART- and DESI-MS
- Automated contaminant profiling in MS data

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Features of technology development

- Technology development
- Production of reference standards and well-characterised test samples
- Simplified sample preparation techniques
- *Validation* by means of small-scale interlab studies

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Results

- 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), validated at 50 % of the regulatory limits.
- Surveys that will enable exposure assessments
- Contributions to the validation of predictive models for transfer from feed to food

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Some examples (1)

- **Multiplex dipsticks** for **antibiotics** in various food products
- A **flow cytometry** based multiplex **immunoassay** (**Luminex**) for residues of **coccidiostats** (lasalocid A, monensin, salinomycin, narasin, and nicarbazin) in eggs and their cross-contamination in non-targeted feed (laying hens feed)
- **Transfer study** for lasalocid from

  feed ⇨ eggs

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Some examples (2)

- **Cytosensor assay** for **methylmercury** (MeHg) in marine based food and feed, applying luminescent recombinant bacterial cell biosensors
- **NIR hyperspectral imaging** method for the detection of ergot contamination in food/feed
- Direct screening for dithiocarbamates on intact vegetables with **DESI and DART** simplified **MS** (feasibility study)

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The consortium (1)

Research institutes:

- RIKILT - Institute of Food Safety (NL)
- Consejo Superior de Investigaciones Cientificas (SP)
- Chemisches und Veterinäruntersuchungsamt, Stuttgart (DE)
- European Commission DG – JRC, IRMM (BE)
- Central Science Laboratory (UK)
- RIVM (NL)
- Consiglio Nazionale delle Richerche, ISPA Bari (IT)
- Walloon Agricultural Research Centre, Gembloux (BE)
- Centre d' Economie Rurale, Division Hormonologie (CER) (BE)

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The consortium (2)

Universities:

- VSCHT - ICT, Prague (CZ)
- National Food Institute - Technical University (DK)
- Queen's University Belfast (UK)
- Tampere University of Technology (FI)
- Universidade de Santiago de Compostela (SP)

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The consortium (3)

Large food and feed industries:

- Nutreco (NL)
- Nestlé (Switzerland)

SME:

- Unisensor SA (BE)

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Dissemination / exploitation

- Web-site and E-newsletter
- Open days for stakeholders
- Workshops for end users
- Education modules for international BSc and PhD programs
- Publications and presentations at international conferences
- Adoption of methods into standards by CEN committees
- Innovation implementation via the participating SME and specific third parties
- Collaboration with other EU FP6 and FP7 projects

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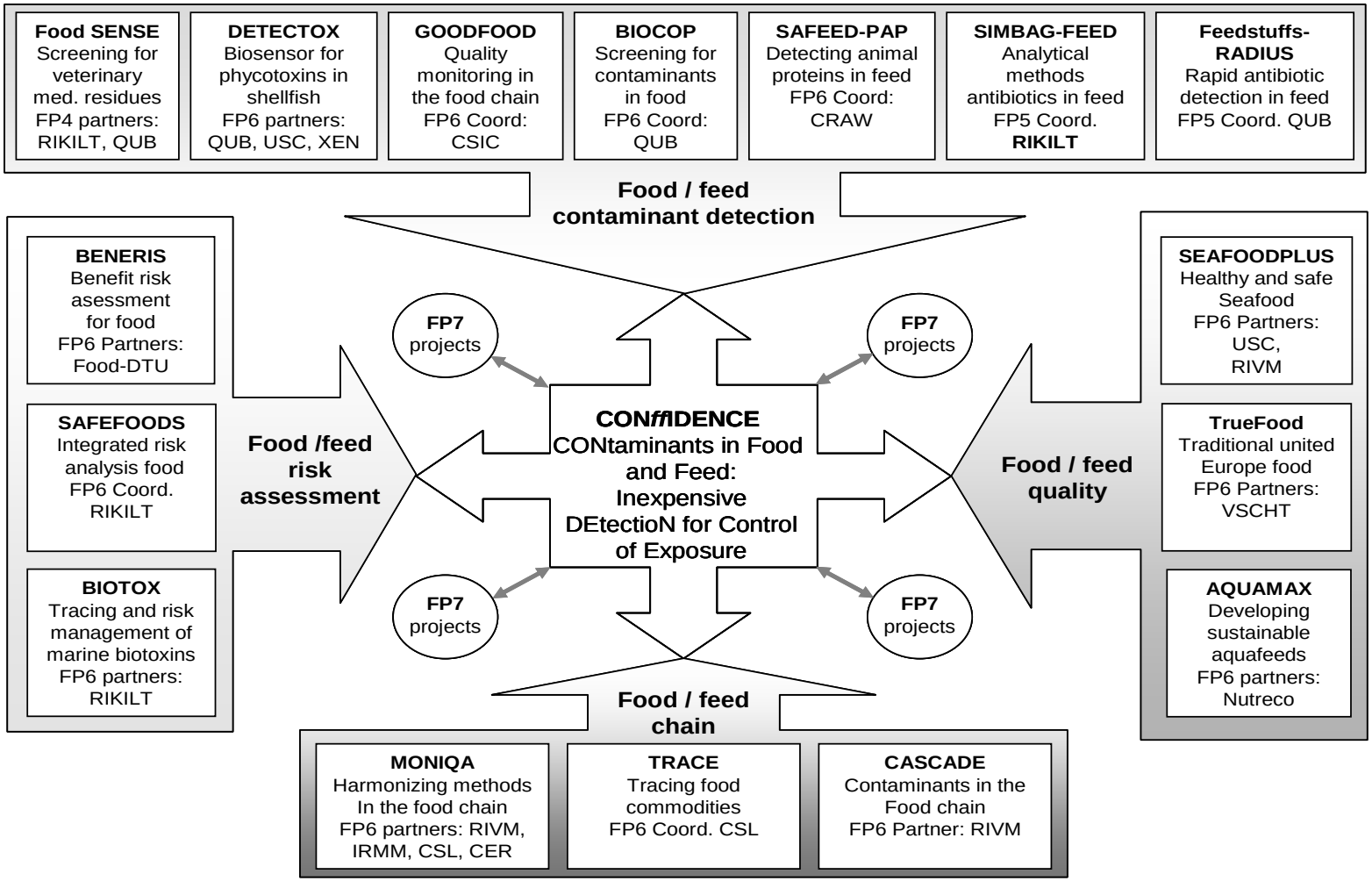
European approach



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The Advisory Board

Representatives from:

- FAO/IAEA
- DG-SANCO
- EFSA CONTAM panel
- CEN committee Food analysis – Horizontal methods (CEN/ TC 275)
- European Technology Platform (ETP), “Food for Life”
- International Fishmeal and Fish Oil Organisation (IFFO)

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More information

Website: **www.conffidence.eu**

(launched end October 2008)

Contact:

coordination@conffidence.eu

e-newsletter

(registration on website)

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Thank you for your attention !

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