LESSONS LEARNT FROM THE CONFFIDENCE PROJECT: CONTAMINANTS IN FOOD AND FEED – INEXPENSIVE DETECTION FOR CONTROL OF EXPOSURE

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The presence of potentially hazardous chemicals in food remains a major concern among consumers. Recent food contamination incidents, e.g. regarding aflatoxin M1 in milk in Serbia, Romania, Croatia and The Netherlands through feeding of contaminated maize from Balkan countries certainly contribute to fears about the safety of food.
Currently, a variety of analytical test methods is used to help ensure the safety of food and feed in Europe, both for goods produced in the EU and imported from third countries. Many of these methods are tedious and time consuming and require sophisticated and expensive instrumentation.
The CON*ff*IDENCE project aimed to further improve food and feed safety in Europe and beyond by the development of faster and cost-efficient screening and confirmatory methods for the detection of a wide range of chemical contaminants in different food and feed commodities. These methods will not only save precious time in ever faster production cycles, but will also permit more food/ feed samples to be monitored due to the lower costs per test. In combination with the broadened spectrum of detectable residues and contaminants the CON*ff*IDENCE project has significantly increased food safety in Europe.
Within CON*ff*IDENCE, rapid and simplified multi-methods have been developed for:

- persistent organic pollutants: PCB's, brominated flame retardants, PAH's
- perfluorinated compounds: PFOS, PFOA, FOSA
- pesticides: dithiocarbamates, paraquat
- antibiotics: tetracyclines, sulphonamides, quinolones, chloramphenicol, tylosin
- coccidiostats: lasalocid, monensin, narasin, salinomycin, nicarbazin and diclazuril
- heavy metal speciation: inorganic arsenic, methylmercury
- alkaloids: ergot, pyrrolizidine and tropane
- marine biotoxins: PSP, DSP, ASP, palytoxin and tetrodotoxin
- mycotoxins: DON, zearalenone, fumonisins and T-2/HT-2

in products such as seafood, fish feed, cereal-based food and feed, dairy products, vegetables, honey and meat. A balanced mix of novel multiplex technologies has been utilized, including dipsticks, flow cytometry with functionalized beads, optical and electrochemical biosensors, metabolomics-like comprehensive profiling, ambient MS and NIR hyperspectral imaging. The methods have been validated in-house and through small- or full-scale collaborative studies. Specific validation schemes for screening tests have been designed and successfully applied to a number of different methods. Moreover, international surveys have been organized that contribute to exposure assessment.
The consortium consisted of 16 partners from 10 European countries, representing 8 research institutes, 5 universities, 2 large food and feed industries and 1 SME. CON*ff*IDENCE started in May 2008 and was finished in December 2012. It was coordinated by RIKILT – Institute of Food Safety, The Netherlands.
In the presentation, key results from CON*ff*IDENCE will be presented. Among others key aspects regarding the validation experiments for screening tests will be discussed.

Website: www.conffidence.eu

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