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Dear stakeholder,

The CONFIDENCE project team is proud to present the 4th edition of the CONFIDENCE e-newsletter. In this newsletter you will find recent developments in the CONFIDENCE project and related information in the area of contaminants in food and feed.

If you want to subscribe to CONFIDENCE News, please fill in the registration form on

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Best regards,

Jacob de Jong, RIKILT - Institute of Food Safety

CONFIDENCE coordinator

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In the spotlight

1st CONFIDENCE Open Day



On January 27, 2010 the CONFIDENCE project held its first open day in Noordwijkerhout, directly following the Rapid Methods Europe 2010 Conference (25-27 January 2010 in Noordwijkerhout, the Netherlands). The afternoon started with a number of oral presentations giving an overview of the project activities and achievements thus far. After a coffee break the program continued in the adjacent room, where about 20 posters from CONFIDENCE activities and a number of posters from related EU projects were on display. In addition, several methods were performed using portable equipment, enabling visitors to get an impression of the steps involved in performing the analytical procedures. Sample cleanup (using fish samples), lateral flow devices (easy to use "dip sticks") and flow cytometry (using a Luminex X100 machine) were exhibited. There was much interest in the

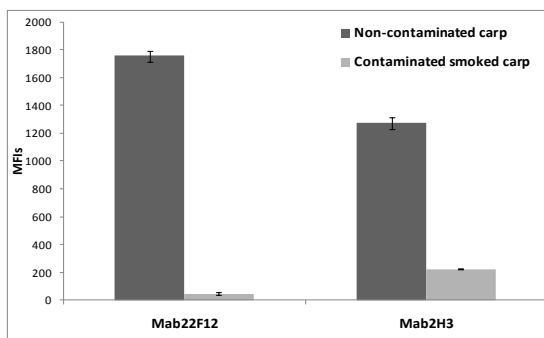


methods on display, from scientific as well as industrial stakeholders. Two other methods (requiring large, difficult to transport equipment) were explained using animated slide shows: NIR camera for ergot detection and Surface Plasmon Resonance for marine biotoxins. The combination of posters, hands on activities and oral presentations proved to be effective in generating interest and stimulating discussions. In total, 28 stakeholders and about 30 project members attended. The presentations and posters presented at the Open Day and a photo impression of the occasion are available at the CONFIDENCE internet site: www.confidence.eu. The CONFIDENCE project team is quite pleased with its success and would like to take this opportunity to thank all participants and attendees for their positive contributions and sincere interest in the project.

[Read more about this open day](#)

News from the CONFIDENCE project

Developing detection methods for organic pollutants; POPs, PFCs, Pesticides



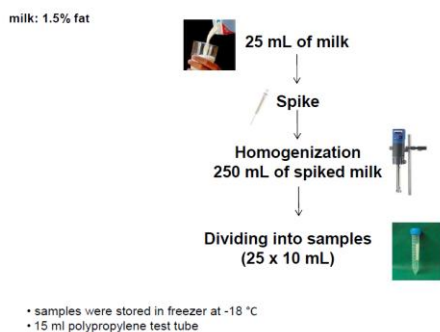
Responses (MFIs) obtained with the FCIA with extracts of non-contaminated carp (black columns) and with contaminated smoked carp (grey columns) with two monoclonal antibodies (Mab22F12 and Mab2H3).

The manuscript describing the flow cytometry-based immunoassay (FCIA) for the sensitive detection of benzo[a]pyrene (BaP) and other relevant polycyclic aromatic hydrocarbons (PAHs) in buffer and food extracts is accepted for publication in *Analytica Chimica Acta*. The results were in agreement with those obtained with gas chromatography-mass spectrometry (GC-MS) for the detection of PAHs in extracts of smoked carp and wheat flour and has great potential for the future routine multiplex application with immunoassays for other persistent organic pollutants (POPs) in combination with a simplified extraction procedure which is under development at the moment.

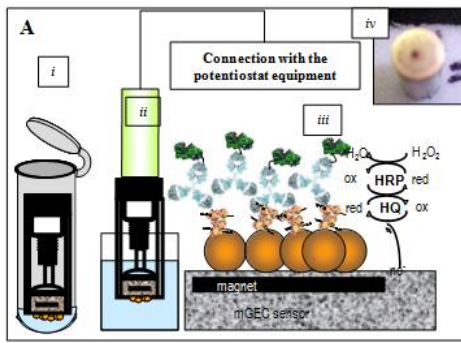
[Read more on this publication](#)

Regarding the PFCs, a simplified and harmonized analytical procedure for the detection and quantification of Perfluorooctanesulfonate (PFOS), perfluoro octane sulfonamide (FOSA), and perfluorooctanoic acid (PFOA) in food has been developed. WP1b is working on the in-house validation of a smart analytical method for perfluorinated compounds as well as on preparation of interlaboratory studies. It has been initiated the study of the concentration of PFCs in real canned fish samples by ICT-Prague. All analyzed samples were positively for PFCs with PFOS as the most concentrated analyte. In addition, the CSIC group has been assessed different real fish: fish muscle (n=15) and fish liver samples (n=12) from retail stores, working in triplicate. PFCs have been detected in 100 % of fish liver samples and in 93 % of fish muscle samples. Most of the PFCs have been found below the LOQ. Currently, a homogenization test is performed in collaboration with both WP partners and the first interlaboratory is under preparation.

[Read more on PFCs](#)



Homogeneity milk test protocol

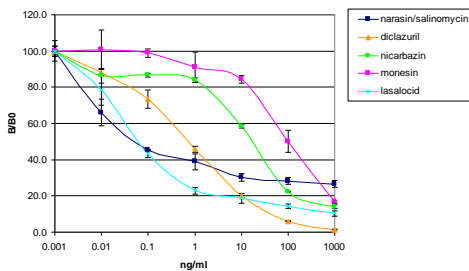


Scheme of the immunosensor

The ELISA for paraquat (PQ) developed by the *Applied Molecular Receptors group* of the CSIC (AMRg-CSIC) in the previous period, has now been evaluated for its performance analyzing this pesticide in food extracts. The results have demonstrated that cereals and potato extracts can be directly analyzed by the PQ microplate-based ELISA with no need for a clean-up step. PQ is detected at very low concentrations in extracts with 25% methanol content, using a very simple extraction procedure developed by the *Chemisches und Veterinäruntersuchungsam (CVUA)* of Stuttgart. All the matrix effect studies were performed using blank samples provided by CVUA, the *Institute of Food Safety (RIKILT)* or *The Food and Environment Research Agency (FERA)*. On the other hand, two electrochemical immunosensors for paraquat have been developed by AMRg-CSIC, one of them based on a completely different concept. Both sensors have shown the ability to detect low concentrations of PQ, achieving LODs well below the required MRLs. Moreover, one of these configurations offers the possibility of finally obtain a multi-analyte detection system.

[Read more on pesticides](#)

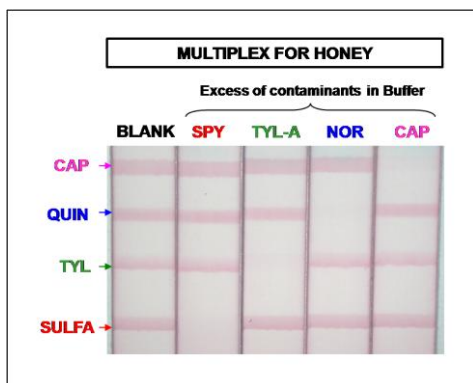
Developing detection methods for Veterinary Pharmaceuticals: Coccidiostats, Antibiotics



Calibration curves of the 3-plex (salinomycin, narasin, nicarbazine and diclazuril) and the 2-plex assay (monensin and lasalocid).

Within WP2a (coccidiostats), one of the major objectives is the development and validation of a flow cytometry-based multiplex immunoassay (FCIA) allowing the simultaneous detection of six target coccidiostats at residue or cross-contamination levels of concentration in eggs and in non-target feed. During the second year of the CONFIDENCE project, the set of necessary immunochemical reagents was successfully completed; selective and sensitive antibodies against monensin, salinomycin, diclazuril, lasalocid and nicarbazine were produced. Individual (single-plex) FCIA could therefore be developed. These assays involved the coupling of the beads with ovalbumin and horse radish peroxidase conjugates or directly with the target coccidiostat. The performance achieved was satisfactory enough to trigger the combination of the single-plex assays into two multiplex FCIA that allow the simultaneous determination on the one-hand of narasin, salinomycin, nicarbazine and diclazuril and on the other hand of lasalocid and monensin. The sensitivity of these two multiplex assays showed to be within the range of the maximum target levels; the two multiplex assays are therefore ready to be tested on the feed and egg sample materials containing coccidiostats also produced within the project.

[Read more on coccidiostats](#)



Multiplex dipstick for honey

During the second year of the research the focus within WP2b (antibiotics) has been on the development and evaluation of immunoreagents and the construction of dipstick based screening tests for the rapid screening of antibiotics in foods including the optimised Tetrasensor®, Sulfasensor®, combined malachite green and leucomalachite green sensor and the multi-sensor for honey by partner Unisensor (Liege, Belgium). An alternative format electrochemical immunosensor (ECIMS) for sulfonamide analysis has also been

developed at Applied Molecular Receptors group, CSIC, (Barcelona, Spain) and evaluated as a rapid laboratory based screening test.

[Read more on antibiotics](#)

Developing detection methods for Heavy Metals

Recently there has been a lot of focus on inorganic arsenic in foodstuffs with relation to food safety, emphasized by two recent opinions from EFSA (October 2009) and JECFA (March 2010). In both cases inorganic arsenic is focused upon as the most toxic arsenic species and more specific data on inorganic arsenic in foodstuffs are called upon. In CONfIDENCE WP3 one of the objectives is the development of a method for the selective determination of inorganic arsenic based on solid phase extraction (SPE) for separation followed by determination by HG-AAS.

The developed method is currently being validated in-house at DTU Food and will later be subjected to a collaborative trial involving several European laboratories. The results from the validation study are expected later this year.

[Read more on heavy metals](#)

Developing detection methods for Biotoxins: Alkaloids, Marine Biotoxins, Mycotoxins

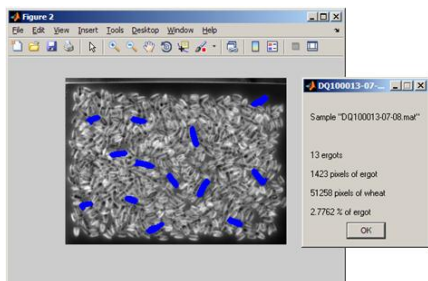
Within the alkaloids work package in CONfIDENCE, multiplex dipsticks are developed to rapidly and easily determine the ergot alkaloids ergotamine and ergocristine in cereals and feed, the pyrrolizidine alkaloids jacobine and lycopsamine in honey and feed, and the tropane alkaloids atropine and scopolamine in feed. Currently the activities are in the stage, where antibodies and test materials have been produced and the actual dipstick methodology is in development. The first results for pyrrolizidine alkaloids and tropane alkaloids look promising; for ergot alkaloids the experimental work will start soon. Regarding the ergot study by NIR imaging, to quantify ergot bodies in cereals, 8 samples have been prepared including mixtures wheat/ergot at several concentrations from 0 to 1%, including 0.05% and 0.1% which are the limits in line with the current EU legislation, for ergot bodies in grains for human and in feed for animal consumption respectively. Three spectral libraries (ergot, wheat and background) were built and used for the development of discrimination equations. The figure shows the results of the data treatment applied on one image and gives the counting results. Similar experiment is on going on a line scan camera using a larger wavelength range and performing quicker the analyses.

[Read more on alkaloids and ergot bodies](#)

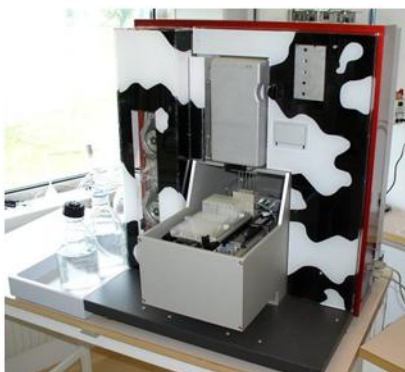
Multiplex analysis can be achieved by the development of multi-flow cell SPR and/or by the development of multi-spots within a single SPR flow cell for different bio-recognitions. This device is a molecular interaction array system that can perform concentration analysis of multiple analytes. Within CONfIDENCE this technology is currently being applied to multiplex marine biotoxin analysis. A toxin assay for PSP (Saxitoxin), PSP (Neosaxitoxin), DSP (okadaic acid) and ASP (Domoic acid) toxins has been incorporated into each of the four flow cells of a single biosensor chip thus allowing samples to be analyzed under



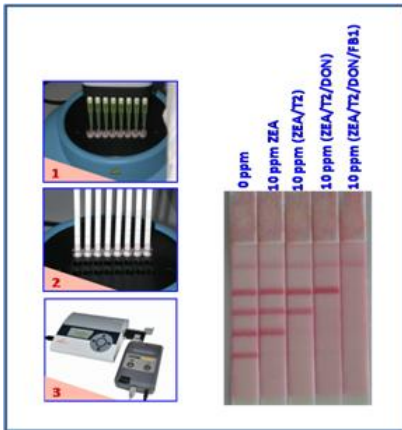
Method for the selective determination of inorganic arsenic



Ergot bodies (in blue) detected by NIR hyperspectral imaging



Multi-flow cell SPR



Multiplex dipstick for *Fusarium* toxins

different cycle conditions. Toxicological studies on emerging toxins spiroptides and palytoxins are on-going and these toxins will be incorporated onto the multiplex platform.

[Read more on marine biotoxins](#)

Regarding the mycotoxins, during the second year of the project, prototype multiplex dipsticks were assembled by coating the strip with the four antigens (indirect competitive format). Multiplex dipsticks were designed in order to reach detection limits (cut off levels) compatible with the EU legislation in force or expected for *Fusarium* toxins (EC Regulations No 1881/2006 and 1126/2007). Different simplified sample preparation protocols were developed. The applicability of the developed protocols to cereal food matrices is under evaluation.

[Read more on mycotoxins](#)

News from other projects

European research on mycotoxin monitoring and reduction

8 March 2010



Prof. Angelo Visconti. (Foto: FreshPlaza)

A. Visconti (CNR-ISPA, WP4c leader on Mycotoxins) presented an overview on recent outputs of the European research on mycotoxin monitoring and reduction, including general information on the CONFIDENCE project. The presentation was included in the Workshop: "Managing Innovation of Agro-Food systems in Mediterranean Regions", held at the University of Foggia (Italy) on March 8th 2010.

[Read more on EU outputs on mycotoxins...](#)

CONFIDENCE at the 2nd MONIQA international conference

08 - 10 June 2010

The MoniQA conference will include 10 sessions. One of these is session 9: "Emerging technology for food safety assessment (BioCop, CONFIDENCE)". This joint session will disseminate project results of the BioCop project (www.biocop.org – an FP6 Integrated Project "New Technologies to Screen Multiple Chemical Contaminants in Food") and discuss recent developments in the ongoing project CONFIDENCE (www.confidence.eu – an FP7 project "Safer food through rapid and cost-efficient tests for chemical contaminants in the food chain").

[Read more about the conference...](#)



News highlights

JECFA EVALUATION ON ARSENIC, MERCURY AND DEOXYNIVALENOL

29 March 2010



The Joint FAO/WHO Expert Committee on Food Additives (JECFA) held their 72th meeting in Rome on 16-25 February 2010. Six food contaminants were evaluated, among these inorganic arsenic, mercury and deoxynivalenol.

For inorganic arsenic a BMDL0.5 (Benchmark Dose Lower Confidence Limit) for a 0.5% increased incidence of lung cancer was determined from epidemiological studies to be 3.0 µg/kg bw/day (3-7 µg/kg bw/day based on the range of estimated total dietary exposure). A range of assumptions were used to estimate the total dietary exposure to inorganic arsenic from drinking water and food. The previously established PTWI value of 15 µg/kg bw/week was withdrawn. The committee noted that more accurate information on the inorganic arsenic content of foods is needed to improve assessments of dietary exposures to inorganic arsenic and furthermore highlighted the need for validated methods for selective determination of inorganic arsenic in food matrices. WP3 in CONFIDENCE aims at the development of novel validated methods for inorganic arsenic and will also produce valuable data to be used in future risk assessment of dietary exposure to inorganic arsenic.

For mercury the committee established a PTWI value of 4 µg/kg bw/day for inorganic mercury. The previous PTWI value for total mercury was withdrawn. This PTWI value is applicable to dietary exposure to total mercury from foods other than seafood. For these foods the previously established PTWI value for methylmercury should be applied. The Committee noted that there was a lack of quantitative data on methylmercury in non-fish products and on inorganic mercury in foods in general. Although WP3 in CONFIDENCE focus on samples of marine origin the method principle developed here may also be of use in future investigations on methylmercury in non-fish food products in order to create data for these sample types.

For deoxynivalenol (DON) and its acetylated derivatives (3-Ac-DON and 15-Ac-DON), as 3-acetyl-deoxynivalenol (3-Ac-DON) is converted to deoxynivalenol (DON) in vivo and therefore contributes to the total DON-induced toxicity, the Committee decided to convert the provisional maximum tolerable daily intake (PMTDI) for DON to a group PTMDI of 1 µg/kg bw for DON.

[Read more about the JECFA evaluation...](#)

Upcoming Events

20TH SETAC EUROPE ANNUAL MEETING

23 - 27 May 201



The SETAC Europe Annual Meeting is Europe's biggest meeting on environmental toxicology and chemistry with more than 1500 presentations in parallel platform sessions and poster sessions, participants and scientific speakers from academia, business and government and a blend of scientists and practitioners, researchers and regulators all in attendance.

[Read more about the meeting.](#)

SIXTH INTERNATIONAL SYMPOSIUM ON HORMONE AND VETERINARY DRUG RESIDUE ANALYSIS

01 - 04 June 2010



This symposium will consist of plenary lectures, presented by invited speakers outstanding in the domain, of contributed papers (20 min. communications or posters), and of a technical exhibition of scientific instruments and related products.

[Read more about the symposium...](#)

5th NORDIC CONFERENCE ON PLASMA SPECTROCHEMISTRY

06 - 09 June 2010



The Analytical Section of the Norwegian Chemical Society invites scientists and users of science to this Fifth Nordic Conference on Plasma Spectrochemistry. The aim of the conference is to provide a forum to encourage the exchange of ideas and knowledge about recent developments and state-of-the-art knowledge in main areas of analytical plasma spectrochemistry (ICP-OES, ICPMS and related techniques). This is a fine opportunity to share and discuss recent experiences and to be scientifically updated through a number of short courses given by international leading specialists in typical Norwegian informal surroundings.

[Read more about the conference...](#)

2ND INTERNATIONAL MONIQA CONFERENCE

08-10 June 2010



After the success of the First International MoniQA Conference the second conference will set out the state of the art on managing emerging and persisting food scares and the related analytical challenges and socio-economic impact that are connected with this issue.

[Read more about this conference...](#)

2ND INTERNATIONAL FEEDFORHEALTH CONFERENCE

14-15 June 2010



The conference will address international challenges and perspectives: - Impact of new feedstuffs and additives on animal health and product quality; - Feed components improving animal health; - Feeding animals to produce functional foods for humans; - The control and reduction of feed contaminants and carryover from feed to food; - Better methods for identification and monitoring of contaminants; - The impact of changes in feed formulations and diversification of the sources for feeds; - Consumers perception of live stock production, animal health and welfare and of the quality and safety of the resulting food products. Special emphasis will be given in the Conference to foods that improve the health of elderly consumers and on foods of marine origin: - How can we design food improving the health of elderly? - How can this food prevent cognitive decline, possible dementia, osteoporoses and improve the vitamin D status and body mass? - What is the possible role of long chain n-3 fatty acids and other nutrients in this area of animal/marine derived foods? Keynote speakers for each session will include leading international representatives from industry, science and regulatory authorities. Each session will contain 5-10 presentations to be given by participants in the COST Action as well external participants.

[Read more about this conference...](#)

11TH ANNUAL FERA/JIFSAN SYMPOSIUM DETECTION TECHNOLOGIES FOR INTENTIONALLY ADDED ADULTERANTS/CONTAMINANTS

16 - 18 June 2010



This year's symposium will focus on Detection Technologies for Intentionally Added Adulterants/Contaminants. Adulteration of food products

was highlighted recently by the incident in China where melamine was intentionally added to milk in order to give a false indication of high protein content and thereby increase the value of the product. Similar adulteration has occurred in the past, for example when in the 1980s diethylene glycol, a substance related to chemicals used in antifreeze, was added to wines in order to give a false indication of quality measured as residual sugars. Human health consequences and food quality measures relating to such economic adulteration are a growing concern for food producers, manufacturers and regulatory agencies. There are also consequences for damage to brand integrity and economic fraud is a serious crime. This meeting will explore the whole topic with a focus on the development of analytical testing methods that can be applied to confirm product authenticity and safety. Sessions will include case studies, development tools and "lessons learned".

[Read more about this symposium...](#)

EUROPEAN PESTICIDE RESIDUE WORKSHOP 2010

20-24 June 2010

The European Pesticide Residue Workshop (EPRW) is the first European meeting for the presentation and discussion of the latest concepts and developments in the field of pesticide residues in food and drink. The first workshop of this kind was held in The Netherlands in 1996. Ever since it has been arranged every second year. The objective of the workshop is to exchange information and experience and bring together analytical chemists, quality managers, pesticide regulators and other scientists. The scientific programme will include plenary lectures, oral and poster presentations, as well as discussion session.

[Read more about this workshop...](#)

BERLINFOOD2010: EUROPEAN PHD CONFERENCE IN FOOD SCIENCE AND TECHNOLOGY

08 - 10 Sept 2010

In 2010 the first PhD conference arranged by the Training & Career Development Network (TCD) of the FP6 project NovelQ in cooperation with TUB will take place. The objective of the conference is to provide an opportunity for PhD students and Young Researchers (e.g. postdocs) to meet and to discuss EU research topics in the fields related to food science and technology, food health and nutrition, as well as biotechnological applications in food production. This conference is also the place where



science meets industry, which gives an opportunity for close contact and networking for delegates with related industries working in various fields of food science. *Information supplied by Stefan Weigel Berlin – Germany*

[Read more about the conference...](#)

DETECTION TECHNIQUES FOR MYCOTOXIN AND TOXIGENIC FUNGI IN THE FOOD CHAIN

04 - 08 Oct 2010



*ISM-MYCORED
Workshop-Training Course*

The one-week workshop-training course aims to demonstrate and teach traditional methods and new molecular, chemical and immunological systems for rapid, robust and user friendly identification of mycotoxins and toxigenic fungi in the food chain. Much of the course will be spent on practical training in the laboratory. The goal of the course is to demonstrate and teach traditional methods and new molecular, chemical and immunological systems for rapid, robust and user friendly identification of mycotoxins and toxigenic fungi in the food chain. Much of the course will be spent on practical training in the laboratory.

[Read more about this training course...](#)

[Download file](#)

MYCORED INTERNATIONAL WORKSHOP: MYCOTOXICOLOGICAL RISKS IN MEDITERRANEAN COUNTRIES: ECONOMIC IMPACT, PREVENTION, MANAGEMENT AND CONTROL

25 - 27 Oct 2010

The workshop will be focused on the cooperation among Mediterranean Countries, with an overview on the current situation on the occurrence of mycotoxins and toxigenic fungi in Mediterranean Basin. Prevention and control of mycotoxins in Mediterranean food and feed chain, as well as Mycotoxins of Public and Animal Health Significance in the Mediterranean will be other relevant themes to be discussed.

[Read more about this workshop...](#)



WORLD MYCOTOXIN FORUM 2010



08 - 10 Nov 2010

The World Mycotoxin Forum is the leading international meeting series on mycotoxins where food and feed industry representatives meet with people from universities and governments from around the world. The main objectives of The World Mycotoxin Forum are: • to provide a unique platform for the food and feed industry, regulatory authorities and science; • to exchange information and experiences on the various aspects of mycotoxins; • to review current knowledge related to mycotoxins in food and feed; and • to discuss strategies for prevention and control of mycotoxin contamination ensuring the safety of food and feed supply. The sixth conference of The World Mycotoxin Forum will be held 8-10 November 2010, the Netherlands. Besides discussing the latest developments to combat the mycotoxin problem, the conference will include the topics plant toxins and marine biotoxins (phycotoxins). The conference will have a special focus on 'Climate change & Food security'. The World Mycotoxin Forum is also proud to announce that its sixth conference will host a scientific session organised by ILSI Europe.

[Read more about this conference...](#)

INTERNATIONALE COURSE ON ADVANCED FOOD ANALYSIS

15 - 19 Nov 2010

The Graduate School VLAG and the FP7 EU project CONffIDENCE are pleased to announce an international one-week course on Advanced Food Analysis at Wageningen University, The Netherlands. This course is dedicated to PhD students in the areas of food chemistry, food safety and food quality and to R&D professionals from food industry, research and quality institutes. The course program is currently being developed and will comprise presentations by international experts in the field, an excursion and social events. The course will start with a half day "back-to-basics" in order to refresh the basics of analytics. Pre-registration for future information Just send an E-mail with your details to vlag@wur.nl, mention in the subject line "Advanced Food Analysis 2010".



GLOBAL MYCOTOXIN REDUCTION STRATEGIES: RESEARCH ADVANCES IN ASIA AND THE PACIFIC RIM

01 - 04 Dec 2010



We're pleased to announce the international conference "Global Mycotoxin Reduction Strategies: Research Advances in Asia and the Pacific Rim" that will be held in Penang, Malaysia from 1 to 4 December 2010. This joint conference is organised by Universiti Sains Malaysia (USM) and co-organised by International Society for Mycotoxicology (ISM), MycoRed FP7 european project and CIMMYT (Mexico). This appointment will be very important and strategic for all the Asian and Pacific Rim community, as it will involve experts and international scientists to present the latest knowledge and researches developed in the field of toxins and mycotoxins at global level, with focus on particular chains more affected in this area. It also will represent an opportunity for the dissemination of information and networking pertaining to global scientific and policy issues.

[Read more about this conference...](#)

CONFIDENCE FP7 project : www.confidence.eu

For further information contact: coordination@confidence.eu

This work is funded by the European Commission, under the FP7 Food Quality and Safety Priority, within the framework of the Collaborative Project CONFIDENCE – 211326 – entitled "Contaminants in Food and Feed: Inexpensive DETECTION for Control of Exposure". This project is carried out by a consortium coordinated by RIKILT – Institute of Food Safety (NL) and includes 17 partners. The information reflects the authors views, the European Commission is not liable for any use of the information contained therein.

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