



INTERNATIONAL MEASUREMENT CONFEDERATION
TC23 "Metrology in Food and Nutrition"

4th

IMEKO

FOODS

4th International Conference on Metrology in Food and Nutrition
Metrology supporting emerging food topics

<http://www.imekofoods4.be>

16th-18th September 2019
Brussels - Tervuren (Belgium)
Book of abstracts

 **sciensano**

TITLE

Book of Abstracts of the 4th International Conference on Metrology in Food and Nutrition
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EDITORS

J. Alexandre, S. Janssens, J. Van Loco

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The editors state that the content of scientific abstracts is of the responsibility of their respective authors.

WELCOME MESSAGE

We cannot imagine a modern society without metrology. Industry, science and legal instances rely on the correctness of results and data they are using. Novel technologies and emerging concerns put new challenges for metrologists in terms of standardisation and harmonisation and to assess the uncertainties of their data. Furthermore, there is an increasing need of data and knowledge sharing, strengthening the application of the FAIR data principle. The fourth Imekofoods conference will address metrological issues in measurement and data in food quality, food integrity, food safety and nutrition, with emphasis on new technologies.

On behalf of Sciensano and Imeko TC 23 we cordially invite you to take part in the fourth international conference IMEKOFOODS. The symposium will be organised at the Sciensano site in Tervuren, which is located in the green long around Brussels. Sciensano is a new born federal research centre in Belgium which finds its foundation in the concept of 'One Health'.

The IMEKOFOODS 4 conference brings together scientists from academia, laboratories and industry, control authorities and representatives of national and international agencies to exchange scientific results and to discuss the latest findings in food quality, -integrity, -safety, -traceability and nutrition. The conference will offer keynote lectures, oral and poster sessions, workshops, poster awards, vendor seminars and exhibition. A social program with get-2-gether party, visit of the Africa museum, gala dinner and Farewell BBQ will be offered in the splendid premises of the Africa Museum and in the park of Tervuren.

Tervuren is the ideal place for delegates to enjoy the beautiful green surroundings of Brussels with a walking or a biking trip, to visit the Africa Museum or to visit Brussels or Leuven. Due to his central location the historical cities Ghent, Bruges, Antwerp, and Liège... can be easily visited.

Welcome!



Joris Van Loco
Chair of the organizing committee



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COMMITTEES

Scientific Committee

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SUPPORT AND SPONSORSHIP



SCIENTIFIC PROGRAM

INTERNATIONAL CONFERENCE ON METROLOGY IN FOOD AND NUTRITION
 IMEKOFOODS4 – TERVUREN BELGIUM 16-18 September 2019

Monday 16th

8h00	Registration		
9h00	Opening <i>J. Van Loco Welcome word of the symposium Chair</i> <i>I. Castanheira Welcome word of IMEKO</i>		
	Chair: I. Castanheira (INSA,PT)		
9h30	Plenary presentation Prof U. Vrhovsek (FMACH, IT) Foodomics: a milestone in food and nutritional studies		
10h10	Coffee Break & Posters Exhibition		
Auditorium	Session: Food Safety, Trace Elements, Contaminants	L333	Session: Food Integrity / Quality
	Chairs: N. Ogrinc (IJS, SI) and K. Cheyns (Sciensano, BE)		Chairs: N. Belc (IBA, RO) and S. Malysheva (Sciensano, BE)
11h10	Key note presentation	11h10	The effect of temperature on the nutritional quality of edible mealworm <i>Tenebrio molitor</i>
	<i>J. J. Sloth (DTU) Determination of trace elements in food - recent developments from research, reference laboratory and standardization activities</i>		<i>L. Kouřimská, M. Kulma, A. Nevřalová, D. Homolková</i>
11h40	Nickel in feed and food – Results of proficiency tests by the EURL-MN	11h30	Direct elemental analysis of cereal and rice flour using total reflection X-ray fluorescence: new challenges
	<i>H. Amlund, H. Fodnæss, A. Landin and J.J. Sloth</i>		<i>F. Bilo, L. Borgese, C. Zoani, G. Zappa, R. Dalipi, L. E. Depero</i>
12h00	Occurrence of perfluoroalkylated substances (PFAS) in drinking water in Czech Republic	11h50	Development of the analytical method for ⁸⁷ Sr/ ⁸⁶ Sr determination in olive oil
	<i>J. Pulkrabova, M. Buresova, D. Lankova and J. Hajslova</i>		<i>M. Furdek Turk, E. Epova, J. Barre, S. Berail, O. X. Donard and T. Zuliani</i>
12h20	Is there too much lead in Belgian big game meat? 'Short communication'	12h10	Nutrients, secondary metabolites and anti-oxidant activity <i>Moringa oleifera</i> leaves and <i>Moringa</i> -based commercial products -
	<i>A. Ruttens, J. Casaer, C. Marien, A. Ruttens and N. Waegeneers</i>		<i>N.S. Mokgalaka, M.Y. Aphane, V.J. Tembu and L.M. Cele</i>
12h30	Lunch		
Auditorium	Session: Food Safety, Allergens	L333	Session: Food Integrity / Quality
	Chairs: N. Belc (IBA, RO) and S. De Vos (Sciensano, BE)		Chairs: C. Zoani (ENEA, IT) and K. Vandermeiren (Sciensano, BE)
13h45	Flaws and hurdles concerning the harmonization of detecting allergens in food	13h45	Key note presentation
	<i>K. Van Vlierbergh, M. Gavage, M. Dieu, P. Renard, T. Arnould, N. Gillard, I. Taverniers, M. De Loose, K. Gevaert, C. Van Poucke</i>		<i>J. Hajslova (UCT) Well established analytical methods for food quality and safety control: any risk of biased results?</i>

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14h05	Quantification of SO ₂ in wines by Surface Enhanced Raman Spectroscopy and the comparison with the official OIV method <i>I. Cagnasso, L. Berta, L. Mandrile, A.M. Giovannozzi, M. Petrozziello, A.M. Rossi, E. Durbiano</i>	14h15	Enhanced capability of a purge-and-trap, thermal desorption and GCxGC-MS methodology for aroma profiling <i>F. A. Franchina, D. Zanella, E. Lazzari, P-H. Stefanuto, and J-F. Focant</i>
14h25	Development of a DNA barcoding-like approach to detect mustard allergens in wheat flours <i>J. Frigerio, R. Pellesi, V. Mezzasalma, F. De Mattia, A. Galimberti, F. Lambertini, M. Suman, S. Zanardi, A. Leporati and M. Labra.</i>	14h35	Implementing sodium reduction in food regulations in South Africa – the analytical measurement challenges <i>M. Fernandes-Whaley, M. Linsky and D. Prevoo-Franzsen</i>
14h45	Coffee Break & Exhibition		
Auditorium 15:10-15:50	Vendor Presentations Waters Advances in Ion Mobility Mass Spectrometry for Food Analysis <i>J. Claereboudt</i>		L308 15:10-17:00
	chair: S. Gosciny (Sciensano, BE)		
Auditorium	Session: Food Safety, Contaminants & Pesticides	L333	Session: Food Safety / Food Hygiene
	Chairs: J.M. Rodrigues (INMETRO, BRA) and L. Joly (Sciensano, BE)		Chairs: F. Limonier (Sciensano, BE) and M. C. Garcia-Graels (Sciensano, BE)
16h00	Key note presentation <i>F. Verstraete (DG Santé) EU policy on contaminants in food: recent developments and outlook</i>	16h00	Monitoring on hygiene in institutional kitchens in Belgium <i>E. Duthoo, S. Krings, G. Daube, B. Taminiau, M. Heyndrickx, and K. De Reu</i>
16h30	Multi-approach determination of dithiocarbamate fungicides and of their degradation products in fruits and vegetables <i>A. C. Dirtu, G. Lavison-Bompard, A. Ducrocq, C. Inthavong, T. Guérin, P. Jitaru</i>	16h20	Detection and quantification of biogenic amines in Cambodian smoked freshwater fish <i>C. Douny, H. Miith, F. Brose, A. Igout, M-L. Scippo</i>
16h50	New developments in integrated 'sample to results' workflows for the multi-residue analysis of polar anionic pesticides and their metabolites <i>R.J. Fussell, F. Pigozzo, Q. Guo, Y. Li and T. Bo, E. George</i>	16h40	Proposal for a European Metrology Network on food safety – EMN-FS <i>A. M. Rossi and F. Durbiano</i>
17h00-19h30	Get together party		

QualiT - A new Quality Control Toolbox for Mycotoxin and Allergen Analysis
(offered by r-Biopharm AG)

chair: B. Huybrechts (Sciensano, BE)

Tuesday 17th

Auditorium

9h00	Plenary lecture		
	Prof. S. De Saeger (UGent) Recent technologies in the (bio)analysis of mycotoxins		
	chair: C. Zoani (ENEA, IT)		
Auditorium	Session: Food Omics	L333	Session: Proficiency Testing & Reference Materials
	Chairs: K. Presser (PREMOTECH, CH) and S. De Keersmaecker (Sciensano, BE)		Chairs: N. Ogrinc (IJS, SI) and E. Tangni (Sciensano, BE)
9h50	Key note presentation	9h50	Certified reference material of nitrofuran metabolites in chicken breast muscle from incurred samples
	Prof. L. Vanhaecke (UGent) Nutrimetabolomics: integrative action for metabolomic analyses in human nutritional research as proposed by the Foodball consortium		F. G. M. Violante, B. C. Garrido, E. C. P. Rego, E. F. Guimarães; N. O. C. Zúñiga, W. Wollinger; J. M. Rodrigues; F. R. Aquino Neto.
10h20	Avoiding the culture step in outbreak investigations: parameters for optimised metagenomics of contaminated food	10h10	Proficiency Testing Scheme for Benzoic acid in Banana-based Condiment to Support the Traceability of Chemical Measurements to SI units
	F. Buytaers, A. Saltykova, S. Denayer, B. Verhaegen, N. Roosens, K. Vanneste, D. Piérard, K. Marchal, S. C. J. De Keersmaecker		B. S. Ebarvia, A. C. Dacuya, A. R. C. Veranga, J. A. C. Valdueza
10h30	Coffee Break & Poster Exhibition		
Auditorium	Session: Food Genomics	L333	Session: Proficiency Testing, Reference Materials and accreditation
	Chairs: M. Heyndrickx (ILVO, BE) and N. Roosens (Sciensano, BE)		Chairs: M. Fernandes-Whaley (NMISA, ZA) and K. Cheyns (Sciensano, BE)
11h30	Detection of antibiotic resistance genes in microbial fermentation products	11h30	Development of new stable isotope reference materials for food authentication and traceability
	M-A. Fraiture, M. Deckers, N. HC Roosens		N. Ogrinc, A. Schimmelmann, F. Camin, D. Potočnik, H. Qi and S. Kelly
11h50	Reconstruction of plasmids carrying antimicrobial resistance genes in food, feed and human bacterial isolates using short and long read sequencing reads	11h50	ICAR proficiency testing scheme and a novel calculation model to compare proficiency testing schemes
	B. Berbers, A. Saltykova, P.J. Ceyssens, C. Garcia-Graells, K. Vanneste, N. H. Roosens, K. Marchal, S. C.J. De Keersmaecker		S. Orlandini
12h10	Rationalizing the GMO analytical detection procedure: optimization of subsampling, homogenization and milling steps	12h10	International co governance of food safety Based on quality infrastructure

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	<i>I. Taverniers, S. Liévrard, J. Baert, M Dhondt, A. Staelens, M. De Loose</i>		<i>L. Jun , X. Xuelin, F. Xiang</i>	
12:30-13:45	Lunch			
<i>Auditorium</i>	Session: Food Contact Materials		L333	Workshop Toxins
	Chairs: I. Castanheira (INSA, PT) and E. Van Hoeck (Sciensano, BE)			Chair: A. Troupiotis-Tsaïlaki (Sciensano, BE)
	Key note presentation			Key note presentation
13h45	<i>Prof. C. Nerin (UNIZAR) Analysis of individual (MOAH) by APGC- QTOF-MS and comparison to the conventional method LC-GC-MS</i>		13h45	<i>Prof. Dr. M. Rychlik (TUM) Alternaria toxins: Analysis and Risk assessment of Emerging and Modified Mycotoxins</i>
14h15	Mineral oil in food: How is the situation in Belgium and what are the risks? <i>A. Van Heyst, S. Gosciny, B. Mertens, M. Vanlancker, J. Vercammen, S. Bel, S. Vandevijvere, M. Elskens, E. Van Hoeck</i>		14h15	MYCOSUGAR: Investigation on mycotoxins and their producing fungi in sugarcane and its by-products <i>M.F. Abdallah, C. Bereket, V. Kagot, L. Matumba, S. Okoth, M. De Boevre, G. Haesaert, K. Audenaert and S. De Saeger</i>
14h35	Effect of food composition on the migration of surrogate contaminants from paperboard packaging <i>M. Baele, A. Vermeulen, P. Ragaert, B. De Meulenaer</i>		14h35	Occurrence, toxicokinetics and toxicity of citrinin and risk assessment <i>C. Meerpoel, A. Vidal, B. Huybrechts, E.K. Tangni, M. Devreese, S. Croubels and S. De Saeger</i>
14h55	Investigation of migrating substances from food fabrics <i>K. Van Den Houwe, B. Dewilde, J. Van Loco, S. Gosciny and E. Van Hoeck</i>		14h55	Analytical methods for mycotoxin determination <i>B. Huybrechts</i>
15:15-16:20	Coffee break Exhibition			
<i>Auditorium</i> 15:30-16:10	Vendor presentations ABSciex Ensuring the authenticity & safety of food with new advances in LC-MS/MS workflows <i>D. McMillan</i> chair: S. Gosciny (Sciensano, BE)		L308 15:30-17:20	QualiT - A new Quality Control Toolbox for Mycotoxin and Allergen Analysis (offered by r-Biopharm AG)
<i>Auditorium</i>	Session: Nutrition	L333	Session: Metrofood-RI	
	Chairs: L. Kouřimská (CZU, CZ) and M. Andelkovic (Sciensano, BE)		Chair: Claudia Zoani (ENEA, IT)	
16h20	Calcium and vitamin D intake from foods and supplements in the Dutch population <i>MC Ocké, HAM Brants, CS Dinnissen, J Verkaik-Kloosterman, CTM van Rossum</i>	16h00	The Eurachem contribute to quality of measurements (analysis/sampling) in the agrifood sector <i>I. Vercruyse (Eurachem)</i>	
		16h15	ISO/IDF - role of standardisation in the dairy sector <i>S. Orlandini (ISO/IDF)</i>	
16h40	School meals in light of the regulation – Assessment of the public catering decree in primary schools in Hungary <i>A. Varga, M. Bakacs, A. Zentai, B. Nagy, Z. Nagy-Lórinz, G. Erdei, É. Illés, V. Varga-Nagy, K. Mihálydi, E. Sarkadi Nagy, C. Kaposvári</i>	16h25	Food Metrology - Food safety laboratory at METAS <i>S. Mallia (METAS)</i>	
		16h35	Characterization of nanomaterials in food by Transmission Electron Microscopy <i>K. Vandermeiren (Sciensano)</i>	

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17h00	Probiotic properties of lactic acid bacteria isolated from household fermented Sorghum slurries	16h45	Improvement of food quality and safety during food processing: pilot plant experiments <i>N. Belc (IBA)</i>
	<i>M.L. Thaoqe and S. Rapoo</i>	16h55	Data standards, data exchange and the electronic part of METROFOOD-RI <i>K. Presser (PREMOTEK)</i>
		17h05	Circular Economy for Food - Partnership for Sustainable Coastal Cities in the Western Mediterranean <i>C. Chiavetta (ENEA)</i>
17:30-19:00	TC 23 Meeting (invitation only)		
20:00-23:30	Gala Diner Koloniënpaleis, Paleizenlaan, 3080 Tervuren		
Wednesday 18th			
<i>Auditorium</i>			
Session: Nanomaterials & Microplastics			
Chairs: K. Smeets (Uhasselt, BE), J. Mast (Sciensano, BE)			
Key note presentation			
9h00	<i>J. Noireaux Perspective in nanoparticle analysis in food with single particle ICPMS</i>		
9h30	Method validation for determination of microplastics in food <i>M. Dekimpe, D. Deloof, J. Robbens, K. Hostens, B. De Witte</i>		
9h50	Characterization of the nano-sized fraction of silver particles in food additive E174 by EM and SP-ICP-MS <i>S. De Vos, E. Verleysen, M. Ledecq, N. Waegeneers and J. Mast</i>		
10h10	Inhibition of pathogenic bacteria in duck meat using nanoclay encapsulated oregano essential oil <i>P. Klouček, J. Táborský, N. West, A. Fraňková and M. Božik</i>		
10h30	Coffee break		
<i>Auditorium</i>			
Session: Nanomaterials & Microplastics			
Chairs: K. Smeets (Uhasselt, BE), J. Mast (Sciensano, BE)			
Key note presentation			
11h00	<i>R. Kaegi Quantification of (Engineered) Nanoparticles in Complex Matrices: More than a Silver Lining on the Horizon?</i>		
11h30	Physicochemical characterisation of several types of the E171 food additive <i>E. Verleysen, M. Ledecq, S. De Vos, I. Ojea Jimenez, F. Brassinne, N. Waegeneers and J. Mast</i>		
11h50	Towards a routine method for the characterisation of TiO ₂ nanoparticles in food by single particle-ICP-MS <i>L. Givélet, P. Jitaru, D. Truffier-Boutry, J.-F. Damlencourt and T. Guérin</i>		
12h10	<i>Validation of single particle ICP-MS for routine sizing and quantification of the fraction of silver nanoparticles in E174 food additives and confectionery products.</i> <i>N. Waegeneers, L. Delfosse, S. De Vos, E. Verleysen, J. Mast</i>		
12:30-13:15	Best poster award Announcement Imekofoods 5 Closing ceremony		
13:30-15:30	Farewell BBQ		

LIST OF PLENARY AND KEYNOTE PRESENTATIONS

PL1 - Foodomics: a milestone in food and nutritional studies

U. Vrhovsek

Monday 16th of September 9h30-10h10 - Auditorium

K01 - Determination of trace elements in food - recent developments from research, reference laboratory and standardization activities

J.J. Sloth

Monday 16th of September 11h10-11h40 - Auditorium

K02 - Well established analytical methods for food quality and safety control: any risk of biased results?

J. Hajslova, M. Stupak, Z. Dzuman, V. Kocourek and J. Pulkrabova

Monday 16th of September 13h45-14h15 – L333

K03 - EU policy on contaminants in food: recent developments and outlook

F. Verstraete

Monday 16th of September 16h00-16h30 - Auditorium

PL2 - Recent technologies in the (bio)analysis of mycotoxins

S. De Saeger

Tuesday 17th of September | 9h00-9h40 - Auditorium

K04 - Nutrimetabolomics: integrative action for metabolomics analyses in human nutritional research as proposed by the Football consortium

L. Vanhaecke, M. M. Ulaszewska, C. Weinert, A. Trimigno, R. Portmann, G. Vergères

Tuesday 17th of September 9h50-10h20 - Auditorium

K05 - Analysis of individual (MOAH) by AGPC-QTOF-MS and comparison to the conventional method LC-GC-MS

J. Jaén, C. Domeño, P. Alfaro, C. Nerín

Tuesday 17th of September 13h45-14h15 - Auditorium

K06 - Alternaria toxins: Analysis and Risk assessment of Emerging and Modified Mycotoxins

M. Rychlik

Tuesday 17th of September 13h45-14h15 – L333

K07 - Perspective in nanoparticle analysis in food with single particle ICPMS

J. Noireaux, P. Fisticaro

Wednesday 18th of September 9h00-9h30 - Auditorium

K08 - Quantification of (Engineered) Nanoparticles in Complex Matrices: More than a Silver Lining on the Horizon?

R. Kaegi, T. Uusimäki

Wednesday 18th of September 11h00-11h30 - Auditorium

LIST OF ORAL COMMUNICATIONS

Session Food safety, Trace Elements and Contaminants - Auditorium

OC01 - Nickel in feed and food – Results of proficiency tests by the EURL-MN

H. Amlund, H. Fodnæss, A. Landin and J.J. Sloth

Monday 16th of September 11h40-12h00

OC02 - Occurrence of perfluoroalkylated substances (PFAS) in drinking water in Czech Republic

J. Pulkrabova, M. Buresova, D. Lankova and J. Hajslova

Monday 16th of September 12h00-12h20

OC03 - Is there too much lead in Belgian big game meat?

A. Ruttens

Monday 16th of September 12h20-12h30

Session Food Integrity / Quality – L333

OC04 - The effect of temperature on the nutritional quality of edible mealworm *Tenebrio molitor*

L. Kouřimská, M. Kulma, A. Nevřzalová, D. Homolková

Monday 16th of September 11h10-11h30

OC05 - Direct elemental analysis of cereal and rice flour using total reflection X-ray fluorescence: new challenges

F. Bilo, L. Borgese, C. Zoani, G. Zappa, R. Dalipi, L. E. Depero

Monday 16th of September 11h30-11h50

OC06 - Development of the analytical method for $^{87}\text{Sr}/^{86}\text{Sr}$ determination in olive oil

M. Furdek Turk, E. Epova, J. Barre, S. Berail, O. X. Donard and T. Zuliani

Monday 16th of September 11h50-12h10

OC07 - Nutrients, secondary metabolites and anti-oxidant activity *Moringa oleifera* leaves and *Moringa*-based commercial products

N.S. Mokgalaka, M.Y. Aphane, V.J. Tembu and L.M. Cele

Monday 16th of September 12h10-12h30

OC08 - Enhanced capability of a purge-and-trap, thermal desorption and GCxGC-MS methodology for aroma profiling

*F. A. Franchina, D. Zanella, E. Lazzari, P-H. Stefanuto,
and J-F. Focant*

Monday 16th of September 14h15-14h35

OC09 - Implementing sodium reduction in food regulations in South Africa – The analytical measurement challenges

M. Fernandes-Whaley, M. Linsky and D. Prevoo-Franzsen

Monday 16th of September 14h35-14h55

Session Food Safety, Allergens – Auditorium

OC10 - Flaws and hurdles concerning the harmonization of detecting allergens in food

K. Van Vlierberghe, M. Gavage, M. Dieu, P. Renard, T. Arnould, N. Gillard, I. Taverniers, M. De Loose, K. Gevaert, C. Van Poucke
Monday 16th of September 13h45-14h05

OC11 - Quantification of SO₂ in wines by Surface Enhanced Raman Spectroscopy and the comparison with the official OIV method

I. Cagnasso, L. Berta, L. Mandrile, A.M. Giovannozzi, M. Petrozziello, A.M. Rossi, F. Durbiano
Monday 16th of September 14h05-14h25

OC12 - Development of a DNA barcoding-like approach to detect mustard allergens in wheat flours

J. Frigerio, R. Pellesi, V. Mezzasalma, F. De Mattia, A. Galimberti, F. Lambertini, M. Suman, S. Zanardi, A. Leporati and M. Labra.
Monday 16th of September 14h25-14h45

Session Food Safety, Contaminants and Pesticides - Auditorium

OC13 - Multi-approach determination of dithiocarbamate fungicides and of their degradation products in fruits and vegetables

A.C. Dirtu, G. Lavison-Bompard, A. Ducrocq, C. Inthavong, T. Guérin, P. Jitaru
Monday 16th of September 16h30-16h50

OC14 - New developments in integrated 'sample to results' workflows for the multi-residue analysis of polar anionic pesticides and their metabolites

R.J. Fussell, F. Pigozzo, Q. Guo, Y. Li and T. Bo, E. George
Monday 16th of September 16h50-17h10

Session Food Safety / Food Hygiene –L333

OC15 - Monitoring on hygiene in institutional kitchens in Belgium

E. Duthoo, S. Krings, G. Daube, B. Taminau, M. Heyndrickx, and K. De Reu
Monday 16th of September 16h00-16h20

OC16 - Detection and quantification of biogenic amines in Cambodian smoked freshwater fish

C. Douny, H. Mith, F. Brose, A. Igout, M-L. Scippo
Monday 16th of September 16h20-16h40

OC17 - Proposal for a European Metrology Network on food safety – EMN-FS

A. M. Rossi and F. Durbiano
Monday 16th of September 16h40-17h00

Session Food Omics - Auditorium

OC18 - Avoiding the culture step in outbreak investigations: parameters for optimised metagenomics of contaminated food

F. Buytaers, A. Saltykova, S. Denayer, B. Verhaegen, N. Roosens, K. Vanneste, D. Piérard, K. Marchal, S. C. J. De Keersmaecker
Tuesday 17th of September 10h20-10h40

Session Proficiency Testing & Reference Materials – L333

OC19 - Certified reference material of nitrofurantoin metabolites in chicken breast muscle from incurred samples

F.G.M. Violante, B. C. Garrido, E. C. P. Rego, E. F. Guimarães; N. O. C. Zúniga, W. Wollinger; J.M. Rodrigues, F. R. Aquino Neto.

Tuesday 17th of September 9h50-10h10

OC20 - Proficiency testing scheme for benzoic acid in banana-based condiment to support the traceability of chemical measurements to SI units

B. S. Ebarvia, A. C. Dacuya, A. R. C. Veranga, J. A. C. Valdeza

Tuesday 17th of September 10h10-10h30

Session Food Genomics - Auditorium

OC21 - Detection of antibiotic resistance genes in microbial fermentation products

M-A. Fraiture, M. Deckers, N. HC Roosens

Tuesday 17th of September 11h30-11h50

OC22 - Reconstruction of plasmids carrying antimicrobial resistance genes in food, feed and human bacterial isolates using short and long read sequencing reads

B. Berbers, A. Saltykova, P.J. Ceyssens, C. Garcia-Graells, K. Vanneste, N. H. Roosens, K. Marchal, S. C.J. De Keersmaecker

Tuesday 17th of September 11h50-12h10

OC23 - Rationalizing the GMO analytical detection procedure: optimization of subsampling, homogenization and milling steps

I. Taverniers, S. Liévrard, J. Baert, M Dhondt, A. Staelens, M. De Loose

Tuesday 17th of September 12h10-12h30

Session Proficiency Testing, Reference Materials and accreditation – L333

OC24 - Development of new stable isotope reference materials for food authentication and traceability

N. Ogrinc, A. Schimmelmann, F. Camin, D. Potočnik, H. Qi and S. Kelly

Tuesday 17th of September 11h30-11h50

OC25 - ICAR proficiency testing scheme and a novel calculation model to compare proficiency testing schemes

S. Orlandini

Tuesday 17th of September 11h50-12h10

OC26 - International co governance of food safety based on quality infrastructure

L. Jun , X. Xuelin, F. Xiang

Tuesday 17th of September 12h10-12h30

Session Food Contact Materials - Auditorium

OC27 - Mineral oil in food: How is the situation in Belgium and what are the risks?

A. Van Heyst, S. Gosciny, B. Mertens, M. Vanlancker, J. Vercammen, S. Bel, S. Vandevijvere, M. Elskens, E. Van Hoeck

Tuesday 17th of September 14h15-14h35

OC28 - Effect of food composition on the migration of surrogate contaminants from paperboard packaging

M. Baele, A. Vermeulen, P. Ragaert, B. De Meulenaer

Tuesday 17th of September 14h35-14h55

OC29 - Investigation of migrating substances from food fabrics

K. Van Den Houwe, B. Dewilde, J. Van Loco, S. Gosciny and E. Van Hoeck

Tuesday 17th of September 14h55-15h15

Workshop Toxins – L333

OC30 - MYCOSUGAR: Investigation on mycotoxins and their producing fungi in sugarcane and its by-products

M.F. Abdallah, C. Bereket, V. Kagot, L. Matumba, S. Okoth, M. De Boevre, G. Haesaert, K. Audenaert and S. De Saeger

Tuesday 17th of September 14h15-14h35

OC31 - Occurrence, toxicokinetics and toxicity of citrinin and risk assessment

C. Meerpoel, A. Vidal, B. Huybrechts, E.K. Tangni, M. Devreese, S. Croubels and S. De Saeger

Tuesday 17th of September 14h35-14h55

OC32 - Analytical methods for mycotoxin determination

B. Huybrechts

Tuesday 17th of September 14h55-15h15

Session Nutrition - Auditorium

OC33 - Calcium and vitamin D intake from foods and supplements in the Dutch population

MC Ocké, HAM Brants, CS Dinnissen, J Verkaik-Kloosterman, CTM van Rossum

Tuesday 17th of September 16h20-16h40

OC34 - School meals in light of the regulation – Assessment of the public catering decree in primary schools in Hungary

A. Varga, M. Bakacs, A. Zentai, B. Nagy, Z. Nagy-Lőrincz, G. Erdei, É. Illés, V. Varga-Nagy, K. Mihály, E. Sarkadi Nagy, C. Kaposvári

Tuesday 17th of September 16h40-17h00

OC35 - Probiotic properties of lactic acid bacteria isolated from household fermented Sorghum slurries

M.L. Thaoqe and S. Rapoo

Tuesday 17th of September 17h00-17h20

Session Nanomaterials and Microplastics - Auditorium

OC36 - Method validation for determination of microplastics in food

M. Dekimpe, D. Deloof, J. Robbens, K. Hostens, B. De Witte

Wednesday 18th of September 9h30-9h50

OC37 - Characterization of the nano-sized fraction of silver particles in food additive E174 by EM and sp-ICP-MS

S. De Vos, E. Verleysen, M. Ledecq, N. Waegeneers and J. Mast

Wednesday 18th of September 9h50-10h10

OC38 - Inhibition of pathogenic bacteria in duck meat using nanoclay encapsulated oregano essential oil

P. Klouček, J. Táborský, N. West, A. Fraňková and M. Božik

Wednesday 18th of September 10h10-10h30

OC39 - Physicochemical characterisation of several types of the E171 food additive

E. Verleysen, M. Ledecq, S. De Vos, I. Ojea Jimenez, F. Brassinne, N. Waegeneers and J. Mast

Wednesday 18th of September 11h30-11h50

OC40 - Towards a routine method for the characterisation of TiO₂ nanoparticles in food by single particle-ICP-MS

L. Givélet, P. Jitaru, D. Truffier-Boutry, J.-F. Damlencourt and T. Guérin

Wednesday 18th of September 11h50-12h10.

OC41 - Validation of single particle ICP-MS for routine sizing and quantification of the fraction of silver nanoparticles in E174 food additives and confectionery products.

N. Waegeneers, L. Delfosse, S. De Vos, E. Verleysen, J. Mast

Wednesday 18th of September 12h10-12h30

LIST OF POSTER COMMUNICATIONS

Session A | Food Safety

- 1. Isolation and identification of microorganisms from processed milkfish products for the development of matrix-based PT material for salmonella sp. in milkfish**
M.S.A. Aquinaldo, A.P. de Asis, N.M.L. Dela Cruz and S.M. Estrada
- 2. Antioxidant and antimicrobial activities of leaves extracts of urtica dioica L. from Algeria: application in apple fruits**
A. Ouelhadj, L. Khati, D. Tadjenant
- 3. Occurrence of polyether ionophores residues in Brazilian Minas cheese**
F. R. N. Silva, P. A. de C. Braga, F. G. R. Reyes, M. F. Capristo, A. P. Ariseto-Bragotto
- 4. Use of additives in Brazilian dairy products and compliance with current legislation**
A. V. Botaro, A. P. Ariseto Bragotto
- 5. Ultra-low level quantification of pesticides in baby foods using an advanced triple quadrupole GC-MS/MS**
R. J. Fussell, R. Law, A. Lamb, P. Silcock, T. Anderson, J. Cole and C. Cojocariu
- 6. Fluorimetric method and trends in aflatoxins determination**
A. Najdenkoska, P. Misevski, B. Georgievski
- 7. Optimization and validation of HS-SPME GC/MS to measure furan and alkylfurans in babyfood**
Z. Alsafra, G. Scholl, B. De Meulenaer, G. Eppe.
- 8. Investigation of the Polycyclic Aromatic Hydrocarbons contamination in spices and dried herbs available on the Belgian market**
Ph. Szternfeld
- 9. Exposure to pesticides and metals following tea consumption in Belgium**
K. Cheyns, Ph. Szternfeld
- 10. Development and application of a novel analytical methodology for simultaneous speciation analysis of Cr(III) and Cr(VI) in foodstuffs by HPLC-ICP-MS using species-specific isotope dilution**
M. Saraiva, A. Leufroy, R. Chekri, T. Guérin, J.J. Sloth and P. Jitaru
- 11. SIMBA: Design, formulation and optimization of plant growth-promoting microbes for their use as microbial consortia inoculants**
A. Bevivino, C. Cantale, S. Tabacchioni, P. Ambrosino, S. Passato, C. Nobili, A. Fiore, A. Del Fiore, O. Presenti, G. Giovannetti, D. Neuhoff, M. Sudau, E. Maestri, M. Caldara, N. Marmiroli, S.J. Sørensen, J. Nesme, T. Evison, A. Sczyrba, A. Schlüter, A. Brunori, A. Pihlanto
- 12. Toxic element mobility in soil-wheat system: comparison between 6 wheat varieties**
E. Pucci, G. Zappa, C. Zoani, L. Gazza, C. Manetti
- 13. Accomplishment of the EU regulations 2017/644-771 for PCDD/Fs and PCBs in food by using a novel triplequadrupole MS generation**
E. Lazzari, F. A. Franchina, G. Scholl and J-F. Focant

14. Aluminium in food

N. Møller Iversen, H. Amlund, B. Koch Herbst and J.J. Sloth

16. Pilot study for developing an interactive platform to facilitate communication between main actors in the food packaging chain

G. Mustatea, E. L. Ungureanu, D. E. Duta and N. Belc

17. Fast Analysis of a Multi-class Pesticides Panel in Wine and Olive Oil Extracts by LC-MS/MS

L. De Keyzer, B. Miserez, C. Brodie, A. Hilker, O. Kracht, D. Juchelka and J. Radke

18. Food and Beverage Fraud Prevention Using Isotope Fingerprints

B. Miserez, I. Paolini, S. Bani, D. D'Addona, . T. Yang and D. Ghosh

Session B | Food Data

1. Smart Store-Keep your sample and data safe forever.

F. Bilo, L. Borgese, A. Zacco, E. Bontempi, L. E. Depero

2. The use of Biotechnology to improve the use of indigenous complementary food

M.L. Thaoge and M.M. Mosele

Session C | Food Integrity

1. Comparison between ELISA and qPCR kits for detection of hazelnut incurred in rice, cookies and chocolate samples

I. Taverniers, S. Maes, M. Dhondt, N. Victoor, A-C. Huet, A. Lamote, M. Paulus, G. Janssens, N. Gillard and M. De Loose

Session D | Food Quality

1. Assessment of physicochemical, antioxidant and antimicrobial characteristics of Algerian honeys

A. Ouelhadj, R. Nakib, C. Seijo

2. Estimation of flavonoid and chlorophyll changes in several micro-green species due to different LED light regimes with multiparametric fluorescence indexes

C. Nugnes, G. Metelli, L. Nardi, E. Benvenuto

3. Validation of HPLC method with pre-column derivitization for the determination of histamine in dried fish

B.S. Ebarvia, A.C. Dacuya, R.R.L. Rondilla

4. Comparison of ascorbic acid and nitrates content in fruit and vegetables from farmers' market and supermarket

M. Sabolová, T. Dupalová, L. Kouřimská

5. The use of a biofixators for the removal of AFM1 from milk

J. Bošnjir, M. Ivešić, Ž. Pavlek, Ž. Kuharić, S. Serdar, S. Šikić, K. Markov, J. Frece, Ž. Jakopović

6. Could the antioxidant profile be related to the presence of toxic elements in Olea Europea L. leaves and in drupes? A study on 11 Italian cultivars

S. Mastrantonio, C. Nobili, C. Zoani, S. Procacci, D. Palumbo, A.M. Giusti, E. Pucci, L. Bacchetta

7. Sustainability in the food industry: managerial and technological actions to reduce the environmental footprint of Tinaia wine and Taleggio

A. Del Fiore, M. Valerio, C. Chiavetta, S. Cortesi, V. Fantin, C. Rinaldi, O. Presenti and N. Colonna

8. Evaluation of antifungal activity of essential oils against *Penicillium* spp. in in vitro and in vivo conditions by integrated approaches

A. Del Fiore, P. De Rossi, D. Palumbo, L. Quercia, C. Dalmastrì, S. Sarrocco, G. Zappa and A. Bevivino

9. METROFOOD-CZ: state-of-the-art national research infrastructure in the fields of food quality & nutrition

L. Páček, L. Kouřimská, P. Klouček, T. Míčka, M. Božík, K. Jíralov, J. Hajšlová and M. Urban

10. Researches on the impact of minimal processing on the antioxidant potential of cabbage varieties

M. Munteanu, M. Zachia, N. Belc, T. Manasia, F. Burnichi and F. Israel-Roming

Session E | Food Omics

1. Development of a bioinformatics pipeline for routine analysis of whole genome sequencing data of *Escherichia coli* isolates

B. Bogaerts, S. Nouws, R. Winand, Q. Fu, J. Van Braekel, S. Denayer, B. Verhaegen, S. C. J. De Keersmaecker, N. Roosens, K. Marchal and K. Vanneste

2. Detection of food enzyme-producing microorganisms in food enzyme preparations

M. Deckers, K. Vanneste, R. Winand, S. C.J. De Keersmaecker, S. Denayer, M. Heyndrickx, D. Deforce, M-A. Fraiture, N. H.C. Roosens

3. An integrated strategy combining DNA walking and NGS to detect GMOs

M-A. Fraiture, N. H.C. Roosens

4. The added value of WGS for foodborne outbreak investigation and surveillance of STEC and Staphylococcal enterotoxins

S. Nouws, B. Bogaerts, S. Denayer, B. Verhaegen, D. Piérard, N. Roosens, K. Vanneste, K. Marchal, and S. C. J. De Keersmaecker

Session F | Proficiency Testing & Reference Materials

1. Proficiency test round for the determination of deoxynivalenol, ochratoxin A and zearalenone in cereals

E.K. Tangni, Z. Han, B. Huybrechts, J. Mesquelier, E. Van Hoeck, W. Guo, Du. Ying, Z. Zhao

2. Certified reference materials and quality control materials Valuable tools for laboratory management

C. Maune, R. Malone, J. Rodgers and R. Niemeijer

3. The role of scientific research in increasing the performance of agro-food testing/analysis

F. Șerbancea, N. Belc, C. Uțoiu, V. Ionescu, A. Culețu, F. Manolache

4. Primary reference material for somatic cell counting in milk

S. Orlandini and H. van den Bijgaart

5. Establishment of the international joint research center of reference material for mycotoxins: contexts and fields of activities

E.K. Tangni, Z. Han, B. Huybrechts, J. Mesquelier, E. Van Hoeck, W. Guo, K. Jiang, J. Van Loco, Z. Zhao

6. Preparation of dimethylarsinic acid reference material

Q.Y. Sun, G. Bo, L. Feng-li, W. Yun, Q. Dai-jun, H. Qing-bo, Y. Zhong-yuan, Z. Jian-qiang

Session G | Food Contact Materials

1. Mineral oil migration from cardboard food contact materials: assessing the endocrine activity of mineral oils (PAHs) using the DRE-, ERE- and PPAR γ CALUX bioassays

J. Boonen, A. Van Heyst, K. Van Langenhove, E. Van Hoeck, B. Mertens, M. Elskens, H. Demaegdt

2. Analysis of individual (MOAH) by APGC- QTOF-MS and comparison to the conventional method LC-GC-MS

J. Jaén, C. Domeño, P. Alfaro, C. Nerín

3. Release of trace elements from porcelain enamelware

H. Demaegdt, K. Cheyns

Session I | Nutrition

1. Level of minerals and inorganic contaminants in meat, fish and mixed dishes: an exploratory analysis developed in Portugal

M. Mendes, I. Coelho, I. Castanheira, I. Cabral, A.S. Matos

2. Influence of fat types on the fatty acids and trans fatty acids composition of biscuits

A.L. Mihai, M. Negoită, G.A. Horneț and N. Belc

3. Soy protein hydrolysates in bakery products

A. Culetu, D.E. Duta, Z. Knežević-Jugović, J. Jovanović, N. Šekuljica, D.L. Comaniciu, L.V. Ordodi

4. Analysis of the amylose content of starch from different gluten-free flours

A. Culetu, D.E. Duta, M. Schimbator, I. Susman, G. Stamatie, N. Belc

5. Characterization of Jerusalem artichoke as ingredient in bakery products

L. Apostole, N. Belc, I. Susman, M. Schimbator

6. HPLC/DAD Method for Determination of Flavonoids Rutin and Quercetin in Herbal Supplements

T. Janeva, A. Najdenkoska, Z. Arsova-Saradinovska

Session J | Nanomaterials

1. Optimization and validation of quantitative TEM analysis of pristine titanium dioxide powders in a regulatory context

F. Brassinne, E. Verleysen, M. Ledecq and J. Mast

2. Towards a routine method for the characterisation of TiO₂ nanoparticles in food by single particle-ICP-MS

L. Givelet, P. Jitaru, D. Truffier-Boutry, J.-F. Damlencourt and T. Guérin

Session K | Accreditation

- 1. Shortening the traceability chain for Africa: purity assignments of organic calibrators**
M. Fernandes-Whaley, N. Nhlapo, L. Quinn, D. Prevoo-Franzsen

I6 - HPLC/DAD Method for Determination of Flavonoids Rutin and Quercetin in Herbal Supplements

T. Janeva (1), A. Najdenkoska (2), Z. Arsova-Sarafinovska (1,2)

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(2) Institute for Public Health of the Republic of North Macedonia, “50 Divizija” No 6, 1000 Skopje, Republic of North Macedonia

Flavonoids are a large group of polyphenolic components possessing benzo- γ -pyronic structure and are widely distributed in plants. The chemical nature and the biological activity of flavonoids depends on the structural class to which they belong, the degree of hydroxylation, the degree of polymerization, and the presence of other substituents and bonds. *Ginkgo biloba* is one of the top-selling botanicals in the world. It has supported efficacy for the treatment of cerebrovascular disease and dementia. *Ginkgo biloba* leaf extract is said to contain more than 20 kinds of flavonoids. We have analyzed quercetin and rutin as representative flavonoids in the commercially available herbal supplements containing *Ginkgo biloba* leaf extract. HPLC analyses were performed using a Shimadzu LC-2010 chromatographic system (Shimadzu, Kyoto, Japan) consisting of a LC-20AT Prominence liquid chromatograph pump with a SPD-M20A Prominence Diode Array Detector. Chromatographic separation was performed on a Purospher® STAR RP-18e reversed-phase column (250 X 4.0 mm I.D.; particle size 5 μ m) in a gradient mode with a mobile phase constituted of: acetonitrile: 3% phosphoric acid (85% phosphoric acid was used). The elution was carried out at a flow rate of 1.50 ml/min. All analyses were performed at room temperature (24 \pm 2°C). Rutin was monitored at 255 nm, while quercetin at 375 nm. Data analyses were done using Class VP 7.3 Software. The proposed method was validated according to the guidelines set by the International Conference on Harmonization for validation of analytical procedures. The identification of flavonoids was done by comparison of retention times of the analyzed components, their UV spectra and by standard addition method. Calibration curves were obtained using standard solutions of rutin and quercetin with concentrations ranged from 0.01 – 0.08 mg/ml. Correlation coefficients were 1.0 and 0.9998 for rutin and quercetin, respectively. The precision of the method was confirmed by assessment of repeatability and reproducibility. Relative standard deviations obtained in the investigation of repeatability were: 0.52 % and 0.05 % for rutin and quercetin, respectively. Relative standard deviations obtained in the investigation of reproducibility were: 0.82 % and 0.95 % for rutin and quercetin, respectively. The average recovery for samples containing rutin and quercetin were 99.2 % and 101.2 % for rutin and quercetin, respectively. The limits of detection for rutin and quercetin were 0.95 ng/ml and 1.25 ng/ml, respectively, which indicates an excellent sensitivity of the proposed method. From the results presented, it can be concluded that this method is simple, easy to perform and specific for routine determination of flavonoids rutin and quercetin in herbal preparations containing *Ginkgo biloba* extract.

Key words: flavonoids, rutin, quercetin, *Ginkgo biloba*, HPLC, validation