

专题演讲 M Session M

政府间国际科技创新合作专项/欧盟地平线 2020食品、农业与生物工程领域旗舰项目：
中欧食品安全 EU-China Safe

EU-China Safe: China Intergovernmental Cooperation on S&T Innovation/ EU Horizon 2020 Food, Agriculture and Biotechnology Flagship Project

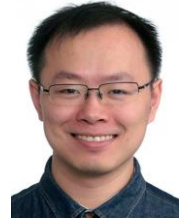
Session Chairs: **Wu Yongning**, Chief Scientist, China National Center for Food Safety Risk Assessment (CFSA);
Director, NHC Key Lab of Food Safety Risk Assessment

Christopher Elliott, Professor of Food Safety;
Founder, Institute for Global Food Security, Queens University Belfast (V)

14:00	茶叶真实性国际合作研究项目 吴嶝 英国贝尔法斯特女王大学 全球粮食安全研究所, 英国皇家学会牛顿国际学者	International Tea Authenticity Collaboration Program Wu Di , Newton International Fellow of Royal Society, Institute for Global Food Security, Queen's University, Belfast	(V)
14:30	如何通过强化治理预判食品掺假漏洞并削减风险 Ivo Muller 达能专业特殊营养食品安全新兴风险& 食品安全标准高级经理	How to Best Anticipate Food Fraud Vulnerability and Mitigate Risks Through Robust Governance Ivo Muller , Emerging Risks & Food Standards Sr Manager Specialized Nutrition, Food Safety Department, Danone	(V)
15:00	农药残留风险面临的挑战 Jana Hajslova RAFA主席; 布拉格化学技术大学 食品化学与分析部计量测试实验室主管	Current Challenges in Pesticide Residues Analysis Jana Hajslova , RAFA Chair; Head of Metrological and Testing Laboratory, Department of Food Chemistry and Analysis, University of Chemistry and Technology, Prague	(V)
15:30	茶歇	Break	
15:50	LC-MS/MS分析肉中结合型硝基喹啉残留方法 (包括残留新标指物化学)开发与应用 Gemma Regan 爱尔兰农业与食品发展部 (Teagasc)食品研究中心; 贝尔法斯特女王大学博士生 Martin Danaher 爱尔兰农业与食品发展部 (Teagasc)食品研究中心研究员 Christopher Elliott 贝尔法斯特女王大学全球食品 安全研究所创始人; 食品安全教授	Development and Application of a LC-MS/MS Method for Analysing Bound Nitrofurans Residues in Meat, Including New Marker Chemistries Gemma Regan , PhD Candidate, Teagasc Food Research Centre & Queen's University Belfast Martin Danaher , Research Officer, Teagasc Food Research Centre Christopher Elliott , Queens University Belfast	(V)
16:20	使用 LC-MS/MS 分析对家禽肌肉15 种 抗流感病毒药物进行定量的方法的开发和验证 Clement Douillet 爱尔兰农业与食品发展部 (Teagasc)食品研究中心博士研究员 Martin Danaher 爱尔兰农业与食品发展部 (Teagasc)食品研究中心研究员 Christopher Elliott 贝尔法斯特女王大学 全球食品安全研究所创始人; 食品安全教授	Development and Validation of a Method for Quantification of 15 Antiviral Drugs Against Influenza in Poultry Muscle Using LC-MS/MS Clement Douillet , PhD Researcher, Teagasc Food Research Centre Martin Danaher , Research Officer, Teagasc Food Research Centre Christopher Elliott , Queens University Belfast	(V)
16:50	使用协调RT-qPCR 和 WvGS 协议调查存在於选定 食品和生产环境中的新型冠状病毒-2 Guerrino Macori 都柏林大学高级研究科学家, 生物信息学家	Investigating the Presence of SARS-CoV-2 in Selected Foods and Food Production Environments Using Harmonised RT-qPCR and WvGS Protocols Guerrino Macori , Senior Research Scientist Bioinformatician, University College Dublin	(V)
17:20	增强欧洲食品消费者信心: 中国大蒜案例研究 Moira Dean 英国贝尔法斯特女王大学全球食品安全研究所教授	Enhancing European Consumer Trust in Food: Chinese Garlic Case Study Moira Dean , Professor, Institute for Global Food Security, Queen's University Belfast, UK	(V)
17:50	会议结束	End of Conference	

茶叶真实性国际合作研究项目

吴頔 英国贝尔法斯特女王大学全球粮食安全研究所，英国皇家学会牛顿国际学者



International Tea Authenticity Collaboration Program

Wu Di, Newton International Fellow of Royal Society,
Institute for Global Food Security, Queen's University, Belfast

演讲内容 Abstract

茶叶作为世界上最受欢迎的饮品与全球大宗交易商品之一，几个世纪以来备受消费者青睐。至2019年已形成年价值超过150亿英镑，增长率超过10%的国际市场。现今茶叶种植在亚太及非洲地区已得到广泛推广，由于其不同地理区位分布、气候土壤条件所形成的质量和风味上的差异，导致其销售价格存在巨大差异（某些地理标志产品超过普通产品的50倍以上）。近期的部分研究和报告还揭示了部分发展中国家和茶提取物饮料中的潜在欺诈问题，而全球茶叶供应链的脆弱性及其安全性已成为消费者的主要担忧并对监管与检测技术提出新的挑战。作为欧盟-中国食品安全合作伙伴框架的拓展与延续，我们旨在利用IGFS的全球合作网络和技术平台，开发快速检测与精准定量并行的多层级检测分析技术工具箱。并与通过人工智能和机器学习等计算机技术相结合，以提高其检测性能，从而最终为不同应用级别的终端用户提供解决方案。

Tea is the world's most popular beverage and have been traded worldwide for centuries, with an annual market worth £15 Bn (2019) with >10% growth rate. Its difference in geographic origin, quality, and taste leads to a huge variance in its price (With more than >50 folds for certain GI products). Recent studies and reports have also revealed the potential fraud issues in developing countries and tea extract drinks. The vulnerability of the global tea supply chain and its safeness have therefore become as major concerns for consumers and technical challenges towards regulation inspections. As an extension and forward program for EU-China collaboration schemes, we aim to develop a 2-Tiered analytical toolbox under the global network and platform of IGFS and integrate with artificial intelligence and machine learning to enhance its performance. Eventually to provide solutions for end users of deferent application levels.

演讲者简历 Biography

吴頔博士毕业于厦门大学生命科学学院，清华大学环境学院与浙江清华长三角研究院联合培养博士后，现为英国皇家科学学会牛顿国际学者暨英国贝尔法斯特女王大学（QUB）访问学者。曾多次赴英国与德国联邦风险评估研究所（BfR）作为访问学者进行短期交流访问。主要研究方向为靶向、非靶向指纹图谱方法在食品完整性领域中的应用（食品真实性、食物过敏）以及污染物限量检测方法的开发以及标准化转化工作。主持、参与国家自然科学基金、中欧地平线H2020 EU-CHINA-SAFE政府间食品安全框架合作伙伴计划等多项国家级科研项目及国家食品安全标准修订工作，发表SCI论文20余篇。现为国际食品法典（CODEX）真菌毒素等标准修订组成员，美国药典委（USP）膳食蛋白专委会委员。

Dr. Wu received his PhD. in Cell Biology from Xiamen University, co-trained postdoctor of Tsinghua University and Yangtze Delta Region Institute of Tsinghua University, Zhejiang. He has recently joined IGFS team at Queen's University of Belfast (QUB) as Newton International Fellow of Royal Society. He was invited by U.K. institutes and German Federal Institute for Risk Assessment (BfR) as short-termed research fellow and guest scientist. His main research now focuses on implementation of targeted and non-targeted fingerprinting tools in food integrity studies (Mainly food authenticity and food allergy) and method standardization/transformation of chemical contaminants. He was involved in multiple national key R&D programs and international corporation frameworks including NSFC and the 'H2020 EU-CHINA-SAFE Food Safety Intergovernmental Framework Partnership Program' of MOST and revision of national food safety GB standards. He is currently member of the Codex Alimentarius Commission standard revision group over Mycotoxins and U.S. Pharmacopial Convention's (USP) Dietary Protein Committee.

M2

如何通过强化治理预判食品掺假漏洞并削减风险

Ivo Muller 达能专业特殊营养食品安全新兴风险&食品安全标准高级经理



How to Best Anticipate Food Fraud Vulnerability and Mitigate Risks Through Robust Governance

Ivo Muller, Emerging Risks & Food Standards Sr Manager Specialized Nutrition, Food Safety Department, Danone

演讲者简历 Biography

Ivo完成兽医和机构科学与管理专业教育后，进入荷兰乳制品食品安全管理局（COKZ）开始了他的职业生涯。

他负责创建食品卫生、食品安全和动物卫生领域的审计项目，并为官方出口证书的保证提供技术支持。其所从事的工作还包括整个乳品供应链的审计，其中涉及许多与第三国主管部门代表团的交流。

9年来，他一直在达能食品安全部门工作，专注于婴幼儿和医学营养领域的产品创新以及推动整个达能公司的食品欺诈防护战略和运营绩效。

After education in veterinary medicine and organizational science & governance, Ivo started his career at the Dairy Food Safety Authorities in the Netherlands (COKZ).

There he was responsible for creating audit programs in the areas of Food Hygiene, Food Safety and Animal Health and he delivered technical input on the assurances behind official export certificates. The job included audits across the dairy supply chain, including many interactions with 3rd country authority delegations.

For 9 years he has been working within Danone's Food Safety department, where he focuses on product innovation for baby- & medical nutrition, as well as on driving the strategy and operational performance on Food Fraud prevention throughout the Danone company.

M3

农药残留风险面临的挑战

Jana Hajslova RAFA主席; 布拉格化学技术大学食品化学与分析部计量测试实验室主管



Current Challenges in Pesticide Residues Analysis

Jana Hajslova, RAFA Chair; Head of Metrological and Testing Laboratory, Department of Food Chemistry and Analysis, University of Chemistry and Technology, Prague

演讲内容 Abstract

In spite of growing effort to minimize the use of synthetic pesticides, under certain conditions, their application is unavoidable. As a consequence, pesticide residues can occur in food crops. To reduce consumers' dietary exposure, thus protect their health, effective control strategies have to be implemented. Currently, multi-detection methods employing in the first step QuEChERS extraction and then, liquid /gas chromatography coupled with tandem mass spectrometry (HPLC/GC-MS/MS) for identification and quantitation, represent 'a gold standard'. With regards to a wide range of physicochemical properties of target pesticides, achieving acceptable performance characteristic, in line with regulatory requirements, is a challenging task, specifically in case of complex matrices such as tea. In this presentation the implementation of method employing mass spectrometric detection with high resolution mass analyser (HRMS) will be introduced, achieved benefits and limitations discussed. The outcome of this method transfer into Chinese laboratories achieved within 'Inter-laboratory comparison study (ILC)' will be presented. The final part of presentation will mention other challenges foreseen in residue analysis.

演讲者简历 Biography

Prof. Jana Hajslova, Ph.D. is the head of ISO 17025 accredited laboratory at the Department of Food Analysis and Nutrition, University of Chemistry and Technology (UCT), Prague, Czech Republic. Prof. Hajslova is responsible for Food Analysis and Food Safety courses, currently supervises 15 Ph.D. students. She has published 420 peer-reviewed papers on analytical challenges in food quality / safety control and authentication (h-Index 63). Her current research is mainly focused on implementation of novel analytical strategies for food authenticity and safety control. Prof. Hajslova has participated in many international and national projects both at scientific and project management level. As the chairwoman, she had a key input in establishing a series of highly reputable international symposia 'Recent Advances in Food Analysis' (www.rafa2021.eu). In 2016 (Dallas, USA), Prof. Hajslova obtained from Association of Official Analytical Chemists (AOAC Int.) prestigious Harvey W. Wiley Award for her excellent scientific work.

M4

LC-MS/MS分析肉中结合型硝基呋喃残留方法(包括残留新标指物化学)开发与应用

Gemma Regan 爱尔兰农业与食品发展部(Teagasc)食品研究中心; 贝尔法斯特女王大学博士生

Martin Danaher 爱尔兰农业与食品发展部(Teagasc)食品研究中心研究员

Christopher Elliott 贝尔法斯特女王大学全球食品安全研究所创始人; 食品安全教授



Development and Application of a LC-MS/MS Method for Analysing Bound Nitrofurans Residues in Meat, Including New Marker Chemistries

Gemma Regan, PhD Candidate, Teagasc Food Research Centre & Queen's University Belfast

Martin Danaher, Research Officer, Teagasc Food Research Centre

Christopher Elliott, Queens University Belfast

演讲内容 Abstract

Nitrofurans are a class of antibiotics that are banned from use in food-producing animals on several continents, due to their undesirable toxicological properties. Methodology for analysing these compounds is standard in most countries, with analysis primarily focusing on four main compounds, detected as their marker residues, AOZ, AMOZ, AHD and SEM. Analysis of nitrofurans using the bound residue approach provides the most sensitive and selective detection, but it is time consuming and leads to longer sample turnaround times. The aim of this work was to extend the scope of analysis and develop a high throughput method to include four additional nitrofurans compounds, detected as their markers DNSAH, HBH, OAH and AGN. The analysis time was shortened from 4 days to 2 days by developing a rapid sample preparation approach, using a microwave-assisted reaction and modified QuEChERS extraction. The method was fully validated in accordance with new 2021/808/EC legislation and was applied to a poultry retail survey on nitrofurans.

演讲者简历 Biography

Gemma is a PhD candidate who is carrying out her work in method development and residue analysis at Teagasc Food Research Centre, Dublin and Queen's University Belfast. She studied for her undergraduate degree in Biochemistry at Trinity College Dublin and developed a keen interest in analytical chemistry. Upon completion of her primary degree, she began her PhD research in October 2017, which forms part of the EU-China-Safe project. Gemma is in the final year of her PhD and her work focuses on LC-MS/MS method development for the detection of banned antibiotic residues in food of animal origin, in particular, the analysis of nitrofurans residues in meat.

M5

使用 LC-MS/MS 分析对家禽肌肉15种抗流感病毒药物进行定量的方法的开发和验证

Clement Douillet 爱尔兰农业与食品发展部(Teagasc)食品研究中心博士研究员

Martin Danaher 爱尔兰农业与食品发展部(Teagasc)食品研究中心研究员

Christopher Elliott 贝尔法斯特女王大学全球食品安全研究所创始人; 食品安全教授



Development and Validation of a Method for Quantification of 15 Antiviral Drugs Against Influenza in Poultry Muscle Using LC-MS/MS

Clement Douillet, PhD Researcher, Teagasc Food Research Centre

Martin Danaher, Research Officer, Teagasc Food Research Centre

Christopher Elliott, Queens University Belfast

演讲内容 Abstract

The abuse of antiviral drugs targeting influenza in avian meat production increases the risk of new resistant avian influenza virus strains emergence and therefore threatens human health. From this issue results the necessity of developing a reliable analytical method for control purpose.

A liquid chromatography tandem mass spectrometry method for the analysis of 15 antiviral drugs in poultry muscle was developed. The sample extraction procedure involved an acetonitrile based protein precipitation step followed by a further dilution in a methanol/water solution. Solvent choice was made as a compromise between extract cleanliness and extraction rate. To limit matrix effects on polar compounds, a hydrophilic interaction chromatographic (HILIC) column BEH amide was selected. The method was fully validated for quantitative confirmatory analysis following the EU 2021/808 guidelines. It is therefore possible to quantify traces as low as 0.1 µg/kg for Arbidol and 2 µg/kg for Zanamivir using one single method.

演讲者简历 Biography

Clement Douillet has graduated with an MSc in analytical chemistry at Universite Lyon 1 in 2017. He also graduated from CPE Lyon the same year as a chemical engineer. He is a PhD Researcher in Teagasc Food Research Centre since 2018. His PhD project focuses on development and validation of analytical methodologies for polar drug residues in food. His expertise lies on LC-MS and food safety.

M6

使用协调RT-qPCR 和 WvGS 协议调查存在於选定食品和食品生产环境中的新型冠状病毒-2

Guerrino Macori 都柏林大学高级研究科学家, 生物信息学家

Investigating the Presence of SARS-CoV-2 in Selected Foods and Food Production Environments Using Harmonised RT-qPCR and WvGS Protocols

Guerrino Macori, Senior Research Scientist Bioinformatician, University College Dublin



演讲内容 Abstract

The COVID-19 pandemic has had an impact on food systems. Despite the various control measures that can be applied, it is towards the final stages of the farm-to-fork continuum, where the greatest risk to public health lies. Processed and unprocessed foods along with their associated packaging could expose a susceptible individual to infection with SARS-CoV-2. This presentation will discuss the results of an extensive sampling plan designed and carried out for the detection of SARS-CoV-2 on foods and their packaging, including the experimental approaches for the survival studies of the virus on meat and fish matrices. In addition, strategies adopted for recovering viral particles suitable for whole virus genome sequencing from positive spent rapid antigen detection tests, are discussed. The approaches and the protocols developed, provided an effective and comprehensive tool for overcoming the challenges during a pandemic to ensure food safety and assess risk, implementing scientifically-based countermeasures.

演讲者简历 Biography

Dr Guerrino Macori is a senior research scientist and bioinformatician at University College Dublin, based at the Centre for Food Safety (CFS). His current research focuses on the application of cutting-edge genomics and metagenomics approaches for the diagnosis and epidemiology of important pathogens, including the most recent SARS-CoV-2 outbreak in Ireland, supported by a Science Foundation Ireland grant as principal investigator. Guerrino joined CFS in September 2019 as a Postdoctoral Fellow in Prof. Séamus Fanning's lab. He obtained his degrees in Biotechnology (BSc) in 2008 and Genomic Biotechnology (MSc) in 2010 from the University of Rome "La Sapienza" followed by a PhD from the University of Pisa in 2015 and Post-Doctoral positions in food safety, metagenomics and bioinformatics from APC Microbiome Ireland. He has conducted large genomic epidemiology studies of food-borne pathogens and diseases in the frame of the One Health paradigm for anticipating, understanding, preventing and controlling diseases caused by pathogens.

M7

增强欧洲食品消费者信心: 中国大蒜案例研究

Moira Dean 英国贝尔法斯特女王大学全球食品安全研究所教授

Enhancing European Consumer Trust in Food: Chinese Garlic Case Study

Moira Dean, Professor, Institute for Global Food Security, Queen's University Belfast, UK



演讲内容 Abstract

China is one of Europe's biggest sources of imports. In both China and Europe, food fraud incidents have affected consumer trust. In this case study we investigate ways of enhancing European consumers' trust in garlic produced in China. An online survey conducted with 573 consumers from the UK and Germany measured consumer trust in Chinese processed garlic and producers (manufacturers and farmers) at baseline and after viewing an image containing information on traceability and authenticity. This image showed how consumers might access traceability and authenticity information by scanning a QR code on their mobile phone. Following the viewing of traceability and authenticity information, trust in the product, the farmer and the manufacturer significantly increased. European consumers intended to buy traceable Chinese garlic and were willing to pay extra. Further, consumers perceived traceable garlic to be safer, of better quality and healthier over garlic without traceable information.

演讲者简历 Biography

Moira's research group focuses on studying the 'head, heart and hands' (perceptions, attitudes, and behaviors) of actors along the food supply chain to explore food security challenges in three main areas: (1) global food integrity, (2) nutrition and health, and (3) how we'll feed the world's growing population in a sustainable, cost-effective and environmentally friendly way. Applying a holistic, integrated and experiential approach, Moira's research group aims to understand actors from 'farm to fork' (e.g. farmers, manufacturers, policy-makers, and consumers), using both qualitative and quantitative research methods, to provide implications for policy, practice, and subsequent research. Research in the group has explored, for example: food traceability; food quality (including safety); food fraud, competitiveness, resilience and trust in food supply chains; food labelling; food marketing; food portion sizes; food shopping; and cooking/food skills.