专题演讲 H Session H

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

主持人: **吴永宁** 中国国家食品安全风险评估中心技术总师，国家卫生健康委员会食品安全风险评估重点实验室主任
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 ⓥ

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 ⓥ

08:30	**国际合作建立打击食品欺诈和保护食品完整性的标准** **谢卓宏** 美国药典委员会，食品化学法典首席科学家	**International Collaboration to Establish Standards that Combat Food Fraud and Protect Food Integrity** ⓥ **Kenny Xie**, Principal Scientist, FCC, US Pharmacopeia
09:00	**肉类掺假风险因子高效检测技术研究** **李家鹏** 中国肉类食品综合研究中心主任助理	**Research on Efficient Detection Technology of Risk Factors of Meat Adulteration** **Li Jiapeng,** Assistant President, China Meat Research Center
09:25	**数字化DNA技术助力食品真实性鉴别创新** **邢冉冉** 中国检验检疫科学研究院副研究员	**Application of Digital DNA Technology in Food Authenticity** **Xing Ranran**, Associate Professor, Chinese Academy of Inspection and Quarantine
09:50	**食品中高氯酸盐检测方法开发及中国居民膳食暴露分析** **张晶** 北京市疾病预防控制中心副主任	**Occurrence of Perchlorate in Foodstuffs: Analytical Methodology Development and the Chinese Dietary Exposure** **Zhang Jing**, Deputy Director, Beijing Center for Disease Prevention and Control
10:10	茶歇	Break
10:30	**食品中二噁英及其类似物GC-MS/MS检测方法的验证** **吕冰** 中国国家食品安全风险评估中心副研究员	**Validation of GC-MS/MS Analysis of Dioxins and Dioxin-like Polychlorobiphenyls in Foods** **Lyu Bing**, Associate Research Fellow, China National Center for Food Safety Risk Assessment
10:55	**硝基呋喃的半抗原设计和合成、单克隆抗体生产和免疫分析方法的建立** **于雪芝** 中国农业大学动物医学院副教授	**Hapten Design and Synthesis, Monoclonal Antibody Production and Immunoassays Development for Nitrofurans** **Yu Xuezhi**, Associate Professor, College of Veterinary Medicine, China Agricultural University
11:20	**葡萄酒真实性鉴别技术研究与应用** **樊双喜** 中轻食品检验认证有限公司副主任	**Research and Application of Wine Authenticity Identification Technology** **Fan Shuangxi**, Vice Director, China Light Food Inspection and Certification Co., Ltd
11:45	**区块链技术在猪肉食品生产中的应用** **吴强** 清华大学长三角研究院高级工程师	**Application of Blockchain Technology in Pork Food Production** **Wu Qiang**, Senior Engineer, Yangtze Delta Region Institute of Tsinghua University
12:10	**专题讨论**	Panel Discussion
12:30	联谊午餐	Networking Luncheon

H1

国际合作建立打击食品欺诈和保护食品完整性的标准

谢卓宏 美国药典委员会，食品化学法典首席科学家

International Collaboration to Establish Standards that Combat Food Fraud and Protect Food Integrity

Kenny Xie, Principal Scientist, FCC, US Pharmacopeia

演讲内容 Abstract

Food fraud is an international problem that threatens the safety and nutritional value of all foods. The Food Chemicals Codex helps to combat fraud by providing independent public standards that define food-grade quality (in terms of identity and purity) for foods and food ingredients. To ensure that these standards are effective across the whole supply chain, they are developed by an Expert Committee that includes scientists and regulators from many countries. These experts include scientists from the food industry in China and senior leaders from the China National Center for Food Safety Risk Assessment. This international collaboration has been crucial in developing FCC standards, methods, and reference materials that protect the world-wide food supply and that support clear communication.

演讲者简历 Biography

谢卓宏博士是美国药典食品化学品法典的主任研究员。 谢博士制定了关于汉麻、蛋白质成分、香料、着色剂和非靶向方法的高影响标准。 他协调标准开发实验室项目，并推动食品标准品的开发。 他拥有马里兰大学的营养和食品科学博士学位以及MBA 学位。 他是经过认证的食品科学家。

Dr. Kenny Xie is a principal scientist at Food Chemicals Codex of US Pharmacopeia. In his role, he develops high-impact standards on hemp, protein ingredients, spices, and colorants and non-targeted methods. He coordinates standard development lab projects, and drives food materials development. He holds a PhD in nutrition and food science and an MBA from University of Maryland. He is a certified food scientist.

H2

肉类掺假风险因子高效检测技术研究

李家鹏 中国肉类食品综合研究中心主任助理

Research on Efficient Detection Technology of Risk Factors of Meat Adulteration

Li Jiapeng, Assistant President, China Meat Research Center

演讲内容 Abstract

本报告介绍了李家鹏团队针对肉类食品中注水、注胶和源性成分掺假等掺假现象，依托地平线H2020项目研究开发的基于LC-MS、多重RT-PCR-熔解曲线、以及近红外光谱的高效检测技术，以及技术的应用、交流情况，成果的取得为肉类掺假风险因素的快速、准确识别提供了完整的解决方案。

This report will introduce the high-efficiency detection technology based on LC-MS, multiple RT-PCR fusion curve and near-infrared spectroscopy developed by Li Jiapeng's team based on horizon h2020 project, as well as the application and communication of the technology. The technical achievements will provide a rapid and effective way to detect the risk factors of meat adulteration Accurately identify and provide complete solutions.

演讲者简历 Biography

李家鹏，中国肉类食品综合研究中心主任助理，教授级高工，从事食生物技术研究，主持或参加省部级及以上科研项目20余项，北京市国资委“肉品真伪及质量属性鉴别科技创新团队”负责人。累计发表科技论文110篇，获得发明专利21件，参与制定标准5项。荣获“北京市青年岗位能手”“农产品加工业十佳杰出青年科技人才”等称号。获得国家科技进步二等奖1项（第5完成人），其他省部级科技进步一等奖5项。多项成果已在相关企业和政府部门得到了应用和转化，取得了良好的经济与社会效益。

Professor Li Jiapeng engaged in food science and biotechnology research, in charge of the head of scientific and technological innovation team for meat authenticity and quality attribute identification of Beijing SASAC.He has undertaken over 20 national and provincial projects tasks. He has published 110 papers, obtained 21 authorized invention patents, participated in the formulation of 5 standards.He has won a Second Award of the Scientific and Technological Progress of the State(2019，ranked fifth), and 5 other awards. Many achievements have been applied and transformed in relevant enterprises and government departments, and good economic and social benefits have been achieved.

H3

数字化DNA技术助力食品真实性鉴别创新

邢冉冉 中国检验检疫科学研究院副研究员

Application of Digital DNA Technology in Food Authenticity

Xing Ranran, Associate Professor, Chinese Academy of Inspection and Quarantine

演讲内容 Abstract

近年来，由食品欺诈、掺假行为引起的一系列商业事件和食品安全事件严重影响了经济市场运行、食品质量和安全监管及消费者的身体健康。食品真实性鉴别已成为食品质量与安全控制中重要的研究内容。针对上述问题研究建立的各项检测技术为政府法令法规的有效实施提供了关键的技术支撑。报告介绍了应用数字化DNA技术在食品物种来源的有效识别方面所取得的研究成果，以及在食品真实性保障中的具体应用，并对数字化DNA技术在食品真实性鉴别领域未来的发展和面临的挑战进行了探讨。

In recent years, a series of food safety events caused by food fraud and adulteration have seriously affected the operation of economic markets, food quality and safety control, and consumers' health. The assessment of food authenticity is a critical issue that has gained much interest internationally. The various technologies established to address these problems provide key technical support for the effective implementation of government regulations. This report introduces the research progress in the application of digital DNA technology for the identification of food species origin and its application in food authenticity assurance. The future development and challenges of digital DNA technology in food authenticity identification are also discussed.

演讲者简历 Biography

邢冉冉，博士，中国检验检疫科学研究院副研究员，全国检验检测认证职业教育集团专业建设专家委员会专家，全国生化检测标准化技术委员会（SAC/TC 387）观察员。主要研究方向为食品真实属性鉴别。近五年主持国家自然科学基金青年科学基金项目1项、中国博士后科学基金项目1项、基本科研业务费2项，参与“十三五”国家重点研发计划4项、H2020中欧食品安全合作专项1项，参与制定国家标准1项，行业标准2项，食品补充检验方法1项，申请国家发明专利10件， 在国内外期刊发表文章30余篇，参与编写食品质量安全相关著作2部。

Dr. Ranran Xing is currently an associate professor at the China Academy of Inspection and Quarantine. Her research focuses on food authentication. In recent 5 years she has leaded and participated in 9 projects, including National Natural Science Foundation of China Youth Science Fund Project, China Postdoctoral Science Fund Project, National Key R&D Programs and H2020 EU-China Food Safety Project. She has participated in the development of a national standard and 4 industry standards, been authorized 10 national invention patents, and published over 30 articles and 2 monographs.

H4

食品中高氯酸盐检测方法开发及中国居民膳食暴露分析

张晶 北京市疾病预防控制中心副主任

Occurrence of Perchlorate in Foodstuffs: Analytical Methodology Development and the Chinese Dietary Exposure

Zhang Jing, Deputy Director, Beijing Center for Disease Prevention and Control

演讲内容 Abstract

采用固相萃取-液相色谱串联四极杆质谱技术建立了多类膳食样品中高氯酸盐的检测方法，检测了第五次中国总膳食研究的混合样品中目标化合物的存在水平，运用点评估模型计算膳食摄入量，初步开展了中国居民膳食暴露水平研究。

A comprehensive analytical method was developed using LC-MS/MS with stability isotope dilution technology for the simultaneous determination of perchlorate in variety of foodstuffs. The composite food samples from the 5th China Total Dietary Study were analyzed and the Chinese dietary intake of perchlorate were preliminarily assessed in this study.

演讲者简历 Biography

张晶博士现任北京市疾病预防控制中心中心实验室副主任，该室为国家食品安全风险监测兽药残留和非法添加物参比实验室。主要研究方向包括1）动物性食品兽药残留检测技术、2）食品污染物和非法添加物检测技术及3）化学性食物中毒因子解析技术。她参与起草了4项食品安全检测方法国家标准，发表文章40篇。

Dr. Jing Zhang is deputy director of Central Laboratory of Beijing Center for Disease Prevention and Control (BCDC). Central Laboratory of BCDC is the China National Food Safety Risk Monitoring Reference Laboratory of Veterinary Drug Residues and Adulterants. Research activities of Dr. Zhang are mainly focused on three areas: 1) analysis of drug residues in animal producing food, 2) detection of food adulterants as well as food contaminants, and 3) instrument-based screening technique for food poisoning cases. She has drafted 4 China’s national detection standards and published 40 papers, 20 of which being international journals.

H5

食品中二噁英及其类似物GC-MS/MS检测方法的验证

吕冰 中国国家食品安全风险评估中心副研究员

Validation of GC-MS/MS Analysis of Dioxins and Dioxin-like Polychlorobiphenyls in Foods

Lyu Bing, Associate Research Fellow, China National Center for Food Safety Risk Assessment

演讲内容 Abstract

本报告依托中欧食品安全项目，验证了食品中二噁英及其类似物的GC-MS/MS检测方法，针对欧盟法规中的对方法的技术要求，考察了方法的精密度、准确度、定量限等多项方法学指标，开展方法协同性验证并将其转化为中国标准。同时开展中欧参比实验室时间的方法比对，实现国际互认。

This topic based on the EU-China Safe project, verified the GC-MS/MS analysis of Dioxins and Dioxin-like Polychlorobiphenyls in Foods. According to the technical requirements of the method in EU regulations, investigated multiple methodological indicators of this method like the precision, accuracy, and LOQ. Carrying out method co-verification and convert them into Chinese standard method. Meanwhile, the method comparison between China and Europe reference laboratories had been carried out to achieve international mutual recognition.

演讲者简历 Biography

负责食品中持久性有机污染物新检测方法开发，承担中国总膳食研究工作，支撑了国家食品安全风险评估基础数据库建设；参与中国居民膳食二噁英及其类似物暴露的健康风险评估，支撑了国家食品安全政策法规建设；研发了新兴污染物内外暴露测定方法并参与研发标准物质，支撑推动了国家新兴污染物生物监测；

Carrying out the research on the internal and external exposure measurement methods of persistent organic pollutants in food and participating in the formulation and revision of national food safety standard methods, which promoted the development of new food safety inspecting technology; Undertook the Chinese total diet study and supporting the construction of the national food safety risk assessment basic database; Participating in the health risk assessment of Chinese residents' dietary exposure to dioxins and their analogues and cadmium exposure, supporting the establishment of national food safety policies and regulations.

H6

硝基呋喃的半抗原设计和合成、单克隆抗体生产和免疫分析方法的建立

于雪芝 中国农业大学动物医学院副教授

Hapten Design and Synthesis, Monoclonal Antibody Production and Immunoassays Development for Nitrofurans

Yu Xuezhi, Associate Professor, College of Veterinary Medicine, China Agricultural University

演讲内容 Abstract

针对硝呋索尔、硝呋酚酰肼、硝呋烯腙以及硝呋地腙的代谢物DNSH、HBD、AGD和OXZ，分别设计了5、4、5、3种半抗原结构，部分已经合成并鉴定完毕。制备了四种硝基呋喃类代谢物的单克隆抗体各1株，IC50分别为2.1、0.1、4.2、0.21 ng/mL。基于制备的抗体，建立了间接竞争ELISA方法，可用于鸡肉和鱼肉样品中药物代谢物的检测。

Five, four, five and three hapten structures were designed for metabolites of nifursol, nifuroxazide, nitrovin and nifuraldizonednsh, NDSH, HBD, AGD and OXZ, some of which have been synthesized and identified. Four monoclonal antibodies against four nitrofuran metabolites were prepared respectively. The IC50 were 2.1, 0.1, 4.2 and 0.21 ng / ml, respectively. Based on the prepared antibodies, an indirect competitive ELISA method was established, which can be used to detect drug metabolites in chicken and fish samples.

演讲者简历 Biography

于雪芝，博士，副教授，中国农业大学 动物医学院，主要从事小分子有害化合物（兽药、霉菌毒素、非法添加剂）的传统抗体、基因工程抗体以及其他新型生物识别材料的制备与体外进化，快速检测技术、分子识别机制研究。本人以第一作者及通讯作者身份，共发表SCI文章13篇（其中JCR一区及Top 期刊4篇），主持国家自然科学基金、十三五国家重点研发计划子课题等3项，申请国家发明专利4项。

Xuezhi Yu, associate professor, college of veterinary medicine, China Agricultural University, is mainly engaged in the preparation and in vitro evolution of traditional antibodies, genetic engineering antibodies and other new biometric materials of small molecule compounds (veterinary drugs, mycotoxins and illegal additives), rapid detection technology and molecular recognition mechanism. As the first author and corresponding author, she has published 13 SCI articles (including 4 JCR Q1 and Top journals), presided over 3 research projects (National Natural Science Foundation of China grant and National Key Research and Development Program sub project), and applied for 4 national invention patents.

H7

葡萄酒真实性鉴别技术研究与应用

樊双喜 中轻食品检验认证有限公司副主任

Research and Application of Wine Authenticity Identification Technology

Fan Shuangxi, Vice Director, China Light Food Inspection and Certification Co., Ltd

演讲内容 Abstract

简单介绍葡萄酒真实性分析检测方法，重点介绍中欧食品安全合作项目子课题-葡萄酒溯源创新技术研发与引进研究成果。

This topic briefly introduces the analysis method of wine authenticity, and focuses on the achievements of research, development and introduction of wine traceability innovation technology of EU China safe project.

演讲者简历 Biography

樊双喜，博士，高级工程师，食品真实性研究中心副主任，核磁共振实验室主管，主要从事食品质量安全和食品真实性技术领域的标准化研究，攻读博士期间获得国家留学基金委资助赴德国联邦风险评估研究所（BfR）公派留学。曾获得中国酒业协会科技进步二等奖1项，北京波谱年会优秀青年报告二等奖1项，北京理化分析测试技术学会优秀青年论文二等奖1项，作为骨干成员完成了国际先进科学技术成果鉴定6项；本人以第一作者身份，共发表文章10余篇（其中SCI 3篇，平均影响因子IF>4），担任Food International Research、Food Chemistry等国际期刊审稿专家；主持核磁共振定量行业标准制定2项，申请国家发明专利5项，参与多项国家自然科学基金、科技部国际合作、欧盟“地平线2020”计划以及国家标准、行业标准制修订等项目研究。

Dr. Shuangx Fan, senior Engineer, vice director of food authenticity research center, head of NMR lab, is mainly engaged in standardization research in the field of food quality safety and food authenticity technology. He studied in the German Federal Institute for Risk Assessmen(BfR) with the support of China National Scholarship Fund. He was awarded the second prize for scientific and technological progress of China Wine Industry Association, one second prize of excellent youth report in Beijing spectrum annual meeting and one second prize of excellent youth thesis in Beijing Institute of physical and chemical analysis and testing technology. As the first author, he published over 10 articles and the average impact factor of three SCI articles is over 4. He was an expert reviewer of international journals such as food international research and food chemistry, and presided over the formulation of two NMR quantitative industry standards, and applied for five national invention patents. He participated in six scientific and technological achievement appraisals, several project researches on food industry standards and national standards, the EU "Horizon 2020" plan and a number of international cooperation projects sponsored by the National Natural Science Foundation of China and the Ministry of Science and Technology.

H8

区块链技术在猪肉食品生产中的应用

吴强 清华大学长三角研究院高级工程师

Application of Blockchain Technology in Pork Food Production

Wu Qiang, Senior Engineer, Yangtze Delta Region Institute of Tsinghua University

演讲者简历 Biography

研究方向：
互联网+食品安全追溯 智慧农业

从事项目：
化学投入品全生命周期的管理与追溯系统实施与应用推广（科技部重大专项）
中欧食品安全合作H2020 EU-China-Safe（中外合作）
基于大数据的食品安全社会共治体系架构研究（科技部重大专项）

Internet + food safety traceability, smart agriculture