Food and Agriculture Organization of the United Nations

World Health Organization

Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment
Methodologies of Microbiological Risk Assessment

Rome, 11-15 March 2019

Experts participating in the meeting

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Background information

In response to the needs of their member countries and Codex, FAO and WHO launched a programme of work on risk assessment of microbiological hazards in foods in the early 2000's, three technical guidance documents were published. Science has evolved over the last decade and there is a need to update and incorporate new developments in the principles and methods for risk assessment of microbiological hazards, FAO and WHO are convening a series of activities to develop a guidance document compiling and synthesizing the available relevant information.

List of experts

The following list of experts is proposed for this meeting. Please find below their bio-sketches. If you have any comments, please contact us at jemra@fao.org and jemra@who.int no later than 25th February 2019.

Dr Aiko Adell Nakashima

Dr Aiko Adell Nakashima obtained her Doctor in veterinary medicine degree at Universidad Mayor, and her Master of Veterinary Preventive Medicine (MPVM) and PhD in Comparative Pathology degrees at University of California, Davis, USA. Currently she has faculty position as Assistant Professor at the Universidad Andrés Bello, Chile. Her area of research involves epidemiology, microbiology, risk assessment, meta-analysis and statistical analysis.

Her research focuses in studying the spread of zoonotic microorganisms in surface water sources and irrigation water, determine the source of faecal contamination of these water sources, estimate the negative health impacts that these microorganisms cause on the health of humans and animals through quantitative microbial risk analysis (QMRA), evaluate mitigation methods to reduce the pathogen loads in irrigation water, and investigating the dissemination of antimicrobial resistance bacteria and genes between human, the environment and animals using a one health approach.

Currently, Dr Adell is a collaborator of Nucleus Millennium 2018 entitled "Interdisciplinary approach in antimicrobial resistance" (Microbe-R) and Fondef Idea 2018 entitled "FageCapsuleS, micro-encapsulated Salmonella bacteriophages with thick and small intestine release technology". She was collaborator in the Conicyt Regional Action project in which the biological quality of water used to irrigate green vegetables in small producer premises was evaluated.

Dr Ursula Gonzales Barron

Dr Ursula Gonzales-Barron obtained her PhD degree at the Biosystems Engineering Department of University College Dublin (UCD), Ireland in 2004. After spending few months as a postdoctoral researcher in the School of Chemical Engineering in the University of Manchester, UK (2005), she took on the positions of Lead Researcher (2005-2007) and Senior Researcher (2007-2012) at UCD Biosystems Engineering. In 2013, she became Principal Investigator at the Mountain Research Centre (CIMO) of the Polytechnic Institute of Braganza (IPB), Portugal. With her computational skills, she has integrated into predictive microbiology and risk assessment of pathogens, novel modelling tools such as dynamic modelling, zero-inflated count data models and meta-analysis; and has also developed new Bayesian theories for the derivation of process control tools for use in food industries. Dr Gonzales-Barron has been in receipt of 10 European grants/awards; and has published 72 peer-reviewed articles and 100 conference proceedings.

She has supervised >15 postgraduate students and leads a research team of 10 young researchers. She has organized and taught at 13 training events in Europe and America, and serves as Editor in the LWT – Food Science and Technology Journal. She bears an h-index of 18, and speaks fluent English, Portuguese and Spanish.

Dr Nourredine Bouchriti

Dr Nourredine Bouchriti holds a DVM and a PhD degrees and certificates on fish quality and toxicology related to marine biotoxins. He is professor of food safety at the department of Pathology and Public Health at the Hassan II Agronomic and Veterinary Institute (Rabat, Morocco) since 1986. He is a member of the national Codex committee and an expert/consultant to the national competent authority in the field of risk assessment, and food business operators for the implementation, validation and audit of HACCP system. He involved in training of official inspectors in the fields of seafood safety and quality, inspection and certification, HACCP and traceability. Risk assessment conducted so far are: qualitative risk assessment of marine biotoxins in shellfish; elements of risk assessment and risk management of parasites (mainly anisakids) in fish ; risk assessment of histamine in fish and recommendations to risk managers; exposure assessment of cadmium from the consumption of shellfish; exposure assessment of nitrites/nitrates from the consumption of vegetables, meat products and water.

He participated as a peer reviewer in FAO/WHO consultation meetings/workshop: risk assessment of vibrios in seafood, exposure assessment of microbiological hazards in food, provision of scientific advice to Codex and member countries, guidance to government on the application of HACCP in small and/or less developed businesses.

Dr Eric Ebel

Eric Ebel is a Senior Veterinary Medical Officer in the U.S. Department of Agriculture's Food Safety and Inspection Services with responsibility for conducting quantitative food safety risk analyses. He is board certified in preventive medicine and epidemiology; and is also an Associate in the Society of Actuaries (Chartered Enterprise Risk Analyst). Dr. Ebel has worked in the public sector for 30 years and has been involved in risk modeling for much of his career. He was a contributor to early guidance documents on microbiological risk assessment for WHO/FAO. He has co-authored 80 publications, most of which concern microbiological risk assessment.

Dr Emma Hartnett

Dr Emma Hartnett is the Director of Risk Assessment of Biological Systems at Risk Sciences International and is an internationally-recognized expert in risk assessment with experience in diverse risk domains including toxicological, microbiological, and nutritional hazards. A modelling and simulation specialist, Emma has over 15 years of experience working in public health risk analysis and decision support. This experience has included: quantitative risk assessment and decision support tools for microbial and chemical hazards in food and water, incursion of transboundary animal diseases, simulation-based decision-support tools supporting bioterrorism preparedness and response for both microbial and chemical attack agents, and pandemic surge capacity health system needs.

Emma provides training in risk analysis and quantitative risk assessment around the world, including on behalf of the continuing education program of the Joint Institute for Food Safety and Nutrition at the University of Maryland. Emma is an active member of the Society for Risk Analysis (SRA) and is a past-chair of the Microbiological Risk Assessment Specialty Group. Emma was given the 2016 Chauncey Starr Distinguished Young Risk Analyst Award by the Society for Risk Analysis for outstanding achievement in science or public policy relating to risk analysis.

Dr Iddya Karunasagar

Dr Iddya Karunasagar obtained his masters and doctoral degrees in Microbiology from Mysore University, India and did postdoctoral research at University of Maryland, USA; University of Sendai, Japan and Wurzburg University, Germany. From 1978-2005, he served the University of Agricultural Sciences, Bangalore, India, starting as Assistant Professor and rising to become Professor and Head of Department of Fishery Microbiology (1992-2003) and Head of Division of Fisheries Sciences (2003-2005). He was elevated to the position of Director of Research, Karnataka Veterinary, Animal and Fisheries Sciences University in 2005 and was designated National Professor by the Indian Council of Agricultural Research, New Delhi. During his academic career, he worked on aquatic animal health, and food safety. His work on antimicrobial resistance in aquaculture reported in 1984 has over 400 citations.

In 2007, Iddya Karunasagar moved to FAO, Rome as Senior Fishery Industry Officer and led a team on fish safety and quality. He was the Rapporteur of joint FAO/OIE/WHO Expert Consultation on Antimicrobial Resistance in aquaculture held in Seoul in 2006 and served on Secretariat of joint FAO/OIE/WHO Expert Consultation on critically important antimicrobials held in FAO, Rome in 2008. He served as Drafting Member (2000-2006) and on the Secretariat of several FAO/WHO Expert consultations related to microbiological risk assessment (2007-2014).

Dr Andreas Kiermeier

Dr Andreas Kiermeier is a professional statistician with over 20 years of experience. He has worked in a variety of fields including smelting, agriculture, food manufacturing, food safety and public health. He is interested in the application of statistics for decision making, especially acceptance sampling, risk assessment and modelling, and the use of technology to promote the understanding of statistical concepts.

In 2007 he became Program Leader of the Food Safety and Innovation research program of the South Australian Research and Development Institute. He led multi-disciplinary projects on eggs, sprouts, pork, red meat, and other food commodities, dealing with pathogenic bacteria, viruses, biotoxins, and quality characteristics of food.

In October 2013, Andreas set up his own consulting company. He has participated in expert meetings with FAO/WHO, including a leading role in the development of the publication “Statistical aspects of microbiological

criteria related to foods – a guide for risk managers." He has delivered several training initiatives in Africa helping risk managers gain a better understanding of risk-based approaches.

Andreas has published over 50 peer-reviewed journal articles and has been on the Editorial Board of the International Journal of Food Microbiology since 2007.

Dr Kostas Koutsoumanis

Dr Kostas Koutsoumanis is currently serving as a Professor, Head of Laboratory of Food Microbiology and Hygiene and Head of the Department of Food Science and Technology in Aristotle University of Thessaloniki, Greece. He received his B.S. degree in Agriculture Engineering from the Agricultural University of Athens, Greece, in 1997 and Ph.D. (Food Science) degree from the same University in 2000.

Currently, he teaches several graduate and MSc courses including General Microbiology, Food Quality and Safety Assurance, Predictive Microbiology and Risk Assessment and Applied Statistics in Food Science. From 2011 he is a member, from 2015 to 2018 the vice-Chair and from 2018 the Chair of the Biohazard panel of the European Food Safety Authority (EFSA). Recent research efforts have centered on the microbiological quality and safety of fresh and processed food products, predictive microbiology, microbial risk assessment, stochastic modelling approaches in food safety and quality, development and application of Time Temperature Indicators (TTI) for monitoring food quality and safety, etc. The research results have been presented and published at 80 refereed scientific journal articles, 14 book chapters, and more than 150 papers in conference proceedings with more than 4500 citations and h-index=39.

Dr Fengqin Li

Dr Fengqin Li is a professor and the director of microbiology laboratory, China national center for food safety risk assessment. Dr Li's study field is microbiology and bio-toxin, especially focus on isolation and identification, antimicrobial resistance and mechanism, phenotypically and genetically subtyping of food-related bacteria. Detection of norovirus, toxigenic fungi as well as mycotoxin in foods was also carried out. Dr Li serves as a member of China National Expert Committee on Food Safety Risk Assessment. Works in relation to microbiological risk assessment are as follows:

(1) Dr Li was responsible for the quantitative risk assessment of *Salmonella* and *Campylobacter* in retailed chicken meats and their implications for public health in China". (2) As a risk assessor, Dr Li joined two projects of "Risk assessment of *Vibrio parahaemolyticus* in sea shellfish and its implication for public health in coastland of China" and "Risk assessment of Bacillus cereus in infant formula and its implication for Chinese infants". (3) Reports related to above works have been submitted to National Health Commission. (4) As a PI, Dr Li was responsible for a project entitled "Preliminary risk assessment of Norovirus in retailed bivalve mollusc and its implication for residences in Beijing".

Dr Tom Ross

Dr Tom Ross is a food microbiologist specialising in mathematical modelling of the microbial ecology of foods, which is important science for innovation in food safety management and food preservation.

Tom has written >150 scientific papers and book chapters on food microbiology and has served on numerous expert committees concerned with science-based food safety management for Australian government and industry organisations and international organisations including the FAO and WHO, and particularly JEMRA, and the USFDA.

He serves on the editorial board of several international microbiology journals. He was appointed to the International Commission on Microbiological Specifications for Foods in 2008. In 2017 he was appointed to the International Committee for Food Microbiology and Hygiene of the IUMS.

Tom is energetic in translating the results of science into practical outcomes for people and society. In addition to internationally recognised published academic outputs in microbial ecology and physiology, Tom and his team develop mathematical models and science-based decision-support software tools that are in the public domain and are now widely used by the food industry and by governments in Australia and internationally for food safety risk management.

Dr Donald Schaffner

Dr Donald W. Schaffner is Extension Specialist in Food Science and Distinguished Professor at Rutgers University. His research interests include quantitative microbial risk assessment and predictive food microbiology. Dr Schaffner has authored more than 160 peer-reviewed publications and has been the recipient of more than $8 million in grants and contracts, largely in the form of competitive national grants. He has educated thousands of Food Industry professionals through numerous short courses and workshops in the United States and dozens of countries around the world.

Dr. Schaffner has served on a variety of expert committees, including service to US National Academy of Sciences and WHO and FAO, the Institute of Food Technologists (IFT) and US National Advisory Committee on Microbial Criteria for Foods (NACMCF).

Dr Schaffner was elected the Secretary of the IAFP in 2010, a five-year commitment including service as President of the organization in 2013-2014. He is the co-host of a podcast on microbial food safety at http://foodsafetytalk.com. He holds a B.S. in Food Science from Cornell University and a M.S. and Ph.D. in Food Science and Technology from the University of Georgia.

Dr Marcelo Lisandro Signorini

Dr Marcelo Lisandro Signorini is working in the Instituto Nacional de Tecnología Agropecuaria – Estación Experimental Agropecuaria Rafaela, Argentina. He studied Veterinary Medicine in 1997 and obtained Master of Veterinary Science in 1999 (Faculty of Veterinary Sciences. Litoral National University (UNL)- Argentina). He received his Doctor in Biotechnology in 2002 (Metropolitan Autonomous University - México City, México).

He was a Subdirector of Poblational Effects - Federal Commission for the Protection against Sanitary Risk Federal Commission of Risk (Mexico) (2003-2007). He was assessor/head of Mexican Delegation in: a) Codex Committee on Food Labelling; b) Codex Committee on Meat Hygiene; and c) Task Force on Food derived from Biotechnology. Codex Alimentarius (WHO/FAO) (2003-2007). His research in the National Council of Scientific and Technological Research (CONICET) - National Institute of Agricultural Technology (Argentina) (2008 -). He is professor of “Public Health” and “Epidemiology” - Faculty of Veterinary Science – UNL (Argentina) (2010 -).

His research areas include: Epidemiology; Quantitative Risk Assessment. He is the author or co-author of 82 peer reviewed papers, and 6 chapters and author of 4 books.

Dr Bing Wang

Dr Bing Wang is a human health risk analyst specialized in addressing microbial food safety issues. Dr Wang’s research aims to improve public health decision making through data analysis and decision tools, particularly the use of epidemiology, systematic review, meta-analysis and quantitative microbial risk assessment to optimize the food production and processing conditions and enhance the effectiveness of food safety and quality resources.

Research and extension activities in Wang's group include cost-effectiveness analysis of intervention strategies to control *Campylobacter* contamination in broiler chicken, exposure assessment of the relative impact of beef consumption and various environmental pathways on antimicrobial resistance exposure in human, collaborating with the Chilean government to integrate risk analysis framework for controlling bacterial and viral contamination in raspberry products in Chile, providing training on the principles and techniques of quantitative risk assessment to public and private sectors within and outside of the United States.

Dr Wang is currently an assist professor in the Department of Food Science and Technology at University of Nebraska-Lincoln (UNL). Prior to joining UNL, Dr Wang was a postdoctoral research associate at the University of Maryland and a postdoctoral research scientist at George Washington University.

Dr Marcel Zwietering

After finishing his study in Biotechnology at Wageningen University in 1987, Dr Marcel Zwietering started working in the Food Process Engineering group at the same university. In 1993 he received his Ph.D. on a thesis with the title 'Modelling of the microbial quality of food'. He continued in the same group as assistant and later associate professor. His research was focussed mainly at quantitative microbiology and risk assessment. In 1995 he spent a sabbatical half year in the Unilever research lab in Colworth House, UK. In 1998 he moved to the research lab of Danone, Le Plessis Robinson in France, where he worked until 2002 on quality control of starter cultures, investigation of the symbiosis, metabolic flux analysis, and quantitative risk assessment.

Since January 2003, he is professor in Food Microbiology at Wageningen University. Within this chair research subjects in the domain of food safety management, risk analysis, fermentation, detection and hygiene, eco-physiology and functional genomics are investigated. He has published 192 papers in peer-reviewed scientific journals and has a h-factor of 39. He is member of the ILSI-Europe Microbiological Food Safety task force, and the strategic advisory committee of the Food Safety Authority of the Netherlands. In 2005 he was elected as member of the International Commission on Microbiological Specifications for Foods (ICMSF) and in 2006 he was appointed in the Dutch Health Council.

The participation of an expert in a FAO/WHO meeting does not imply that they are endorsed or recommended by the FAO/WHO nor does it create a binding relationship between the expert and FAO/WHO.

The list of participating experts, a summary of relevant interests disclosed by such experts, and any appropriate mitigation measures taken by FAO/WHO relating to the management of conflicts of interests, will be reported publically in accordance with FAO/WHO practice.