Joint FAO/WHO Expert meeting on Microbiological Risk Assessment of *Listeria monocytogenes* in Ready-to-Eat (RTE) Food: Attribution, Characterization and Monitoring

*The session was held virtually, 20 October - 6 November 2020*

A virtual meeting of the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA) of *Listeria monocytogenes* in Ready-To-Eat (RTE) Food: Attribution, Characterization and Monitoring was held from 20 October to 06 November, 2020. The purpose of the meeting was to review recent data on *Listeria monocytogenes* and determine the need to modify, update, or develop new risk assessment models and tools for this pathogen. A public call for data and experts was issued to support this work. In addition, background documents on the various aspects related to the meeting were prepared ahead of time for consultation by the experts. Prepared documents included the following: 1) Assessment of past JEMRA documentation; *Risk assessment of Listeria monocytogenes in ready to eat foods: Interpretative summary* (MRA 4) and *Risk assessment of Listeria monocytogenes in ready to eat foods: Technical report* (MRAS), 2) A review of current national *Listeria monocytogenes* surveillance and monitoring programmes, 3) A review of current microbiological/laboratory methods for *L. monocytogenes*, and 4) Update on virulence markers for *L. monocytogenes*. The meeting participants (listed in Annex 1) reviewed the prepared summary documents and other information on outbreaks and disease attribution, virulence, population risk factors, advances in laboratory methods and surveillance.

The aforementioned risk assessment documents (MRA4, MRA 5) were limited to a cross-section of RTE foods (pasteurized milk, ice cream, cold-smoked fish and fermented meats) linked to invasive listeriosis. Since the publication of those documents, outbreaks of listeriosis continue to occur across the globe associated with previously reported foods, but also with many previously unreported food vehicles, including fresh and minimally processed fruits and vegetables. The expert group concluded that future risk assessments should consider additional food vehicles and that a full farm-to-fork risk assessment be considered.

*Listeria monocytogenes* can infect anyone, however it continues to disproportionally affect certain highly susceptible populations. The experts recommended that future risk assessments should review groupings of susceptible groups, based on physiological risks and other socio-economic factors.

New information has emerged on *Listeria monocytogenes* strain variants which influences virulence and environmental tolerance. Based on a panel of specific genes, the experts suggested a potential classification system divided into three categories of decreasing risk to human health.

The expert group concluded that the development and implementation of effective surveillance systems are critical in addressing control of *Listeria monocytogenes*. The use of approved standardized laboratory methods that culture and isolate strains should be the foundation so that human, food and environmental isolates can be further characterized and inventoried.

In conclusion, the expert group identified several critical gaps in the current FAO/WHO risk assessment model and collectively agreed that updating the model would be valuable for informing risk analysis strategies, including in low and middle income countries. The experts prepared short case studies to demonstrate and highlight several key principles that should be considered in the risk assessment for *Listeria monocytogenes*.

**Participant List**

**Ana Allende**  
Senior Researcher  
Centro de Edafologia y Biologia Aplicada del Segura  
Murcia, Spain

**Sukhadeo Barbuddhe**  
Principal Scientist  
ICAR-National Research Centre on Meat  
Hyderabad, India

**Brecht Devleesschauwer**  
Senior Epidemiologist  
Center for Burden and Risk Assessment  
Brussels, Belgium

**Qingli Dong**  
Professor  
University of Shanghai for Science and Technology  
Shanghai, P. R. China

**Catherine Donnelly (Meeting Chair)**  
Professor of Nutrition and Food Science  
The University of Vermont  
Vermont, USA

**Jeffrey Farber**  
Professor  
University of Guelph  
Ontario, Canada

**Lisbeth Truelstrup Hansen**  
Professor, Microbial Food Safety and Environmental Hygiene  
DTU Fødevareinstituttet/DTU Food  
Danmarks Tekniske Universitet/Technical University of Denmark  
Lyngby, Denmark

**Alejandra Latorre**  
Associate Professor  
College of Veterinary Sciences  
Universidad de Concepción  
Concepción, Chile

**Alexandre Leclercq**  
Deputy Head of the French Reference Centre and WHO Collaborating Centre *Listeria*  
Institut Pasteur  
Paris, France
Kudakwashe Magwedere  
Directorate of Veterinary Public Health  
Department of Agriculture, Forestry and Fisheries  
Pretoria, South Africa

Deon Mahoney  
Consultant  
Victoria, Australia

Tom Ross  
Professor in Food Microbiology  
Director, ARC Training Centre for Innovative Horticultural Products  
Tasmanian Institute of Agriculture (TIA)  
Tasmania, Australia

Elliot Ryser  
Professor  
Michigan State University  
Michigan, USA

Marcel Zwietering  
Professor in Food Microbiology  
Wageningen University  
Gelderland, Netherlands

RESOURCES PEOPLE

Martin Wiedmann  
Gellert Family Professor in Food Safety  
Cornell University  
New York, USA

Anne Brisabois  
Research Director  
Laboratory for Food safety, Anses  
Clamart, France

Dorothy-Jean McCoubrey  
Director  
Dorothy-Jean & Associates Ltd  
New Zealand

Jose Emilio Esteban  
Chair, Codex Committee on Food Hygiene

Verna Carolissen  
Food Standards Officer  
Joint FAO/WHO Food Standards Programme

Sarah Cahill  
Senior Food Standards Officer  
Joint FAO/WHO Food Standards Programme

Lingping Zhang  
Food Standards Officer  
Joint FAO/WHO Food Standards Programme

Goro Maruno  
Food Standards Officer  
Joint FAO/WHO Food Standards Programme

SECRETARIAT

Jeffrey LeJeune  
Food Safety Officer  
Food System and Safety Division, Food and Agriculture Organization of the United Nations

Kang Zhou  
Food Safety Officer  
Food System and Safety Division, Food and Agriculture Organization of the United Nations

Christine Kopko  
Food Safety Officer  
Food System and Safety Division, Food and Agriculture Organization of the United Nations

Haruka Igarashi  
Technical Officer  
Department of Nutrition and Food Safety, World Health Organization