Workshop on Evaluation of

Risk Factors for Foodborne Listeriosis

Greenbelt Marriott Hotel, June 16-18th 2015

Joint Institute of Food Safety and Applied Nutrition (JIFSAN), University of Maryland
Grocery Manufacturers Association Science and Education Foundation

Background:

Listeria monocytogenes remains a significant cause of foodborne illness. However, the incidence of listeriosis is low in the general population despite the wide distribution of the microorganism in the environment and the relatively high frequency of isolation in foods. Illness may be expressed as a mild, febrile illness, but also as invasive listeriosis with more severe symptoms, relatively high hospitalization and case fatality rates. A number of factors have been reported to impact the risk of invasive listeriosis, including the number of L. monocytogenes cells consumed, the relative virulence of the strain ingested, and the immune status of the individual.

An understanding the risk factors for listeriosis and ecology of Listeria monocytogenes in food matrices and the environment are important to enable risk managers to target resources to the most effective risk management strategies.

Several risk assessments have been conducted for L. monocytogenes in foods that have provided insights into the relative risk of listeriosis in food products, the identification of risk factors and relevant control strategies. In 2011, an Inter-Agency Dose-response Workshop was organized by the Interagency Risk Assessment Consortium (IRAC) and the Joint Institute of Food Safety and Applied Nutrition (JIFSAN). The workshop reviewed recent data on L. monocytogenes virulence in the context of existing risk assessments, and provided information on data needs to resolve fundamental questions related to risk factors to further understanding of L. monocytogenes dose response relations.
Purpose:

The purpose of the workshop is to facilitate a discussion amongst experts to evaluate the latest information on risk factors of *L. monocytogenes*, to determine what additional information is needed to answer remaining questions on *L. monocytogenes* risks, and to facilitate the development of effective risk management strategies:

- **What do existing risk assessments and current literature tell us about *L. monocytogenes***?
  - Do recent incident/case investigations raise concerns about *L. monocytogenes* that have not been previously addressed in risk assessments? Factors to consider include levels of contamination and the sensitivity of consumers that have fallen ill as well as any knowledge about consumers that were exposed but did not become ill.

- **What are the gaps in currently available risk assessments and literature and what information is needed to address questions of the public health impact and risk management strategies in food products in which the microorganism cannot grow?**
  - What are the data needs to address these gaps?

- **What is the current understanding of strain variability in *L. monocytogenes* virulence and the microorganism’s impact on public health?**
  - What are the data needs to support further understanding of strain virulence?
  - What data are needed to better estimate the relative susceptibility of various immunocompromised subpopulations?
  - What are the strategies used to protect these populations?
  - Are the alternative strategies used to protect these populations (e.g., immunization)?

- **Based upon current understandings of public health impact, are any changes needed to the current approaches or focus on the management of the manufacturing of products in which *L. monocytogenes* cannot grow?**
  - Is the definition of “products in which *L. monocytogenes* cannot grow” clear and scientifically sound? How do the newest epidemiological insights affect this definition?
  - What additional information is needed to determine what changes may be needed or what approaches would be most effective in managing public health risk in such products?