***Training Course 1: Microbiological risk assessment***

The training course will cover the three components of risk analysis – risk assessment, risk

management and risk communication – but will give particular focus to risk assessment under the

context of microbial food safety. The aim is to introduce the participants to the concept of quantitative

microbiological risk assessment as applied in national and international food safety. Participants will

learn how to perform a structured risk assessment in alignment with the food safety question they have to address.

Efforts will be put on stressing the benefits and strengths of quantitative modelling, taking into account the uncertainty in our knowledge and the variability in the key parameters applied in a risk assessment mode (e.g. prevalence and number of pathogens present in the food in question).

Based on this, the participants should be able to perform robust interpretations of risk estimates from

risk assessment models.

At the end of the course, participants will:

Be familiar with the concepts of risk analysis i.e. risk assessment, risk management and risk

communication;

Be familiar with the legal framework and the role of international regulatory agencies in foodsafety

risk assessment;

Understand and be able to describe the four steps of food-safety risk assessment i.e. hazard

identification, hazard characterization, exposure assessment and risk characterization;

Know the key differences between risk assessment approaches and risk terminology used in the

various areas of food-safety risk assessment (e.g. chemical vs. microbial risk assessment)

Be able to identify food safety problems and frame appropriate risk questions;

Be able to construct exposure pathways;

Be able to identify and interpret the data typically required in microbiological risk assessment;

Be able to describe the types of models used in risk assessment (e.g. farm-to-consumption and

process models), their utility, data requirements and differences between models;

Be able to develop qualitative and (simple) quantitative risk assessment models (deterministic

and stochastic) and construct different scenario analyses;

Be able to apply relevant features in the most common software used in quantitative microbial

risk assessments (primarily @RISK);

Be able to interpret risk estimates and run different scenario analyses, taking into account

variability and uncertainty;

Be able to assess the model fit and perform sensitivity analyses;

Have a basic understanding of the importance of appropriate communication of risk assessment

results and risk management decisions.