



Istituto Zooprofilattico Sperimentale
del Lazio e della Toscana *M. Aleandri*

Workshop

Valutazione del rischio microbiologico

Principi e strumenti di base



GRUPPO AZIENDALE
DI VALUTAZIONE DEL
RISCHIO

07 - 11 Novembre 2022



Appia Park Hotel

Via Appia Nuova, 934,
00178 Roma



Workshop – Valutazione del rischio microbiologico in sicurezza alimentare

Titolo evento: Valutazione del rischio microbiologica – Principi e strumenti di base

Prima edizione: 2022, in presenza (25 ore).

Obiettivo primario:

- Fornire al Gruppo aziendale di valutazione del rischio (GAVR)¹ gli strumenti di base per poter comprendere il processo di valutazione del rischio microbiologico in ambito di sicurezza alimentare.

Conoscenze specifiche alla fine dell'evento formativo:

- Comprensione dell'approccio, finalità e peculiarità del processo di analisi del rischio applicato alla sicurezza alimentare.
- Comprensione delle componenti basilari della valutazione del rischio secondo standard Codex Alimentarius².
- Conoscenze statistiche di base al fine della comprensione dei modelli quantitativi.
- Conoscenze di base relative alla microbiologia predittiva e al suo utilizzo.

Prerequisiti:

- Conoscenze di microbiologia degli alimenti.

Responsabile scientifico: Dott. Roberto Condoleo³ e Dr.ssa Maria Francesca Iulietto³, U.O.C. Osservatorio Epidemiologico, IZSLT, Roma.

Partecipanti: Membri del Gruppo aziendale di valutazione del rischio (GAVR) e personale IZSLT interessato.

Materiale richiesto: Laptop personale (Microsoft Office incluso).

Software richiesti:

- Iscrizione a ComBase: <https://browser.combase.cc/membership/Login.aspx?ReturnUrl=%2f>
- Iscrizione a Bibliosan: <http://www.bibliosan.it/>
- Scaricare Pathogen Modeling Program (PMP) versione desktop 8.0 <https://pmp.errc.ars.usda.gov/>

¹ Delibera del Direttore Generale numero 104/22 del 22/02/2022

² <https://www.fao.org/fao-who-codexalimentarius/home/en/>

³ Contatti: roberto.condoleo@izslt.it; mariafrancesca.iulietto@izsl.it

Programma

| Day 1 7 th Nov | | | |
|---|----------|---|--------------|
| 1. Introduction to the course 2. Principles of Microbial Risk Assessment 3. Hazard Identification | | | |
| Time | Item no. | Topic | Length (min) |
| 09.30 - 09.50 | 1.0 | Welcome and tour de table | 20 |
| 09.50 - 10.00 | 1.1 | Workshop objectives | 10 |
| 10.00 - 10.15 | 1.2 | Overview of the workshop activities | 15 |
| 10.15 - 11.00 | 2.0 | Microbial Risk Assessment: quiz | 45 |
| 11.00 - 11.15 | 2.1 | Overview on Risk Analysis | 15 |
| 11.15 - 11.30 | | Coffee break | 15 |
| 11.30 - 11.45 | 2.2 | Setting the scene | 15 |
| 11.45 - 12.45 | 2.3 | Identify the food safety issue. <i>Team work A & B and plenary discussion</i> | 60 |
| 12.45 - 13.30 | 2.4 | How to define the risk question. <i>Plenary discussion</i> | 45 |
| 13.30 - 14.30 | | Lunch break | 60 |
| 14.30 - 15.00 | 3.0 | Hazard Identification: brief introduction | 30 |
| 15.00 - 16.15 | 3.1 | Hazard Identification... what data do we need? <i>Plenary discussion</i> | 75 |
| 16.15 - 16.30 | 3.2 | Take home messages and conclusions | 15 |

| Day 2 8 th Nov | | 4. Exposure assessment | |
|------------------------------|----------|---|--------------|
| Time | Item no. | Topic | Length (min) |
| 09.30 - 09.45 | 4.0 | Methodology for data collection and literature review: brief overview | 15 |
| 09.45 - 10.00 | 4.1 | Exposure assessment: introduction | 15 |
| 10.00 - 10.15 | 4.2 | Modelling the exposure - Part 1. <i>Team work C & D</i> | 15 |
| 10.15 - 10.45 | 4.3 | Deterministic vs. Stochastic: it's a distribution world! Frequency distribution and probability. | 30 |
| 10.45 - 11.00 | 4.4 | What data do you need to evaluate the exposure? Where to find the data? | 15 |
| 11.00 - 11.15 | | Coffee break | 15 |
| 11.15 - 11.30 | s.1 | Summary from day 1: survey challenge | 15 |
| 11.30 - 12.00 | 4.5 | Modelling the exposure - Part 2. <i>Team work C & D</i> | 30 |
| 12.00 - 12.20 | 4.6 | Uncertainty and Variability | 20 |
| 12.20 - 13.00 | 4.7 | Sources of variability and uncertainty. <i>Team work C & D and plenary discussion</i> | 40 |
| 13.00 - 13.45 | 4.8 | Modelling the exposure - Part 3. <i>Team work C & D</i> | 45 |

| Day 3 9th Nov | | 4. Exposure assessment 5. Predictive microbiology | |
|-------------------------------------|-----------------|---|-------------------------|
| Time | Item no. | Topic | Length (min) |
| 09.30 - 10.45 | 4.9 | Level of hazard in contaminated portions. <i>Team work C & D and plenary discussion</i> | 75 |
| 10.45 - 11.00 | | Coffee break | 15 |
| 11.00 - 11.15 | s.2 | Summary from day 2: quiz challenge | 15 |
| 11.15 - 11.45 | 5.0 | Predictive microbiology: theory and applications. | 30 |
| 11.45 - 12.00 | 5.1 | Case Study: Apply Predictive Microbiology in Risk Assessment | 15 |
| 12.00 - 13.15 | 5.2 | Real case study Listeria in Würstel. <i>Team work C & D and plenary discussion</i> | 75 |
| 13.15 - 14.15 | | Lunch break | 60 |
| 14.15 - 14.45 | 5.3 | Fitting data for your microbial model: examples | 30 |
| 14.45 - 15.30 | 5.4 | Data fitting with Combase - part 1. <i>Team work C & D</i> | 45 |
| 15:30 - 16:15 | 5.5 | Data fitting with Combase - part 2. <i>Team work C & D and plenary discussion</i> | 45 |
| 16.15 - 16:30 | 5.6 | Take home messages and conclusions | 15 |

| Day 4 10th Nov | | 6. Hazard characterisation 7. Risk Characterisation | |
|--------------------------------------|-----------------|---|---------------------|
| Time | Item no. | Topic | Lenght (min) |
| 09.30 - 09.45 | 1.5 | Recap from day 1 to day 3 | 15 |
| 09.45 - 10.15 | 6.0 | Scientific discussion: A mozzarella story | 30 |
| 10.15 - 10.30 | 6.1 | Hazard Characterization: overview | 15 |
| 10.30 - 11.30 | 6.2 | Apply dose-response relationship in different populations <i>Team work E & F and plenary discussion</i> | 60 |
| 11.30 - 11.45 | | Coffee break | 15 |
| 11.45 - 12.00 | s.3 | Summary of day 3: quiz challenge | 15 |
| 12.00 - 12.30 | 7.0 | Risk characterization | 30 |
| 12.30 - 13.30 | 7.1 | Combine exposure with hazard characterization. <i>Team work E & F</i> | 60 |
| 13.30 - 14.30 | | Lunch break | 60 |
| 14.30 - 15.00 | 7.2 | Scenario analysis | 30 |
| 15.00 - 15.45 | 7.3 | Base scenario vs alternative scenarios. <i>Team work E & F and plenary discussion</i> | 45 |
| 15.45 - 16:00 | 7.5 | Take home messages and conclusions | 15 |

| Day 5 11th Nov | | 8. Application of Risk Assessment 9. Risk communication | | |
|--------------------------------------|-----------------|--|--|---------------------|
| Time | Item no. | Topic | | Length (min) |
| 09.30 - 10.30 | 8.0 | How to perform a Literature review. Live demo with Scopus | | 60 |
| 10.30 - 11.00 | 8.1 | Setting the scene for the role playing: reporting the output of the risk assessment to the risk managers | | 30 |
| 11.00 - 11.30 | 9.0 | Reporting the output of the risk assessment to the risk managers. <i>Team work G & H</i> | | 30 |
| 11.30 - 11.45 | | Coffee break | | 15 |
| 11.45 - 12.15 | 9.0 | Reporting the output of the risk assessment to the risk managers. <i>Team work G & H</i> | | 30 |
| 12.15 - 13.15 | 9.1 | Plenary presentations of Team G & H: roleplay “debrief to risk assessors” | | 60 |
| 13.15 - 13.30 | s.4 | Final quiz challenge | | 15 |
| 13.30 - 14.30 | 9.2 | Wrap-up of the week, feedback from the participants. Award of the quiz winner and closure of the workshop | | 60 |