The EFSA’s BIOHAZ Panel perspective on food microbiology and hygiene

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EFSA's Mission

- Provide **scientific advice** and **scientific and technical support** for the Community’s legislation and policies in all fields which have a direct or indirect impact on **Food and Feed Safety**.

- Provide **independent** information on all matters within these fields with a high level of **openness** and **transparency**;

- **Risk Communication**;

- **Collaboration and Networking**.
From the question to the answer

European Commission
European Parliament
Member States
Self-tasking

Mandate

Opinion

Risk assessment

Risk communication

Consumers
Media
Industries
Stakeholders

Risk management
The Scientific Panel on Biological Hazards
The Panel on Biological Hazards deals with questions on biological hazards relating to Food Safety and Food-borne Diseases, including:

- Food-borne Zoonoses;
- Food Hygiene;
- Microbiology;
- Transmissible Spongiform Encephalopathies;
- Associated Waste Management.
“Hygiene package”
- Improvement of hygiene and manufacturing (GMP/GHP)
- Implementation of HACCP
- Verification and validation of food safety management systems

Community legislation on the control of zoonoses
- (EC) 2160/2003 to control *Salmonella* and other zoonotic agents (production, processing and distribution)
- Setting targets for *Salmonella* in broilers, turkeys, slaughter and breeding pigs and hens
General and specific hygiene requirements

General
• Compliance with general hygiene requirements throughout the whole food chain
  – International and national guides to good practice

Specific
• Microbiological criteria
• Procedures necessary to meet targets to control hazards
• Temperature control
• Maintenance of the cold chain
• Sampling and analysis
• Food of animal origin (Reg. 853/2004)
Scientific opinions of BIOHAZ Panel on food hygiene and microbiological criteria
Salmonella in pig production

- EC mandate
- One of the question:
  - Identification of risk mitigation options of *Salmonella* at different stages in pig production
  - Adopted from BIOHAZ Panel in March 2006
  - Extract of conclusions and recommendations related to hygienic procedures and requirements
Salmonella in pig production – conclusions on generic hygiene requirements

**At farm level**
- Optimal hygienic and management routines

**At the abattoir**
- Hygienic transport and lairage
- Hygienic design of establishments and facilities including their equipment
- Implementation of GHP and HACCP

**At processing, storage and retail**
- Hygienic procedures for the personnel, the equipment and the establishments
- Processing based on GHP and HACCP
- Temperature control
- Maintenance of cold chain
Conclusions and recommendations on generic hygiene requirements

Microbiological risks in infant formulae and follow-on formulae
- Adopted in September 2004
- Recommendations on the development of guidelines for the reconstitution, handling, storage and feeding at home and at the hospital

*Bacillus cereus* and other *Bacillus* spp. in foodstuffs
- Adopted in January 2005
- GHP in combination with HACCP, control of temperature

*Clostridium* spp. in foodstuffs
- Adopted in March 2005
- GHP, GMP in combination of HACCP
  - Heating process
  - Temperature and duration of storage
A universal mitigation option to eliminate pathogens from the food chain?

- None
- Effective and cost-efficient combination measures:
  - GHP, GMP, HACCP
  - Logistic slaughtering
  - Hurdle theory, Others (??)

Example: Control of *Campylobacter* in poultry processing plants
  - Reduction of fecal leakage during scalding and defeathering
  - Separation of contaminated flocks
  - Decontamination with chemicals such as organic acids
Chemical decontamination treatments for carcasses: EU situation

- Art 3 (2) Reg. (EC) 853/2004: use of substances other than potable water to remove microbial surface contamination from foods of animal origin (after evaluation and approval)
- Draft Regulation proposal setting specific conditions for such treatments is under discussion (MS’s + stakeholders+non food SC)
- Limitations (draft):
  - To use one substance at a time
  - Only for poultry carcasses (to start with)
  - Need of rinsing after application
  - Information to consumer by labelling
Joint AFC/BIOHAZ guidance document on the safety and efficacy of carcass decontamination

- Non replacement of GHP and HACCP
- Substance for carcass decontamination will be regarded as:
  - **Safe**
    - when used in the manner and in the quantities proposed, would not pose any appreciable risk to the health of consumers
  - **Efficacious**
    - when any reduction of the prevalence and/or numbers of pathogenic target bacteria is significant when compared to the control
    - when this reduction is at the same time of relevance to human health
Microbiological criteria are used
- For validation and verification of HACCP-based processes and procedures, and other hygiene control measures.
- To assess the acceptability of a batch of food, including the circumstances where there is insufficient knowledge of production conditions e.g. at port-of entry.
- In EU legislation as a way to communicate the level of hazard control that should be achieved.

Meeting microbiological criteria offers some assurance that particular pathogens are not present at unacceptably high concentrations, but does not guarantee “absence” of those pathogens.
Hazard based vs Risk based food safety management systems

• **Hazard-Based**
  - Decisions, standards and actions are based on objective and verifiable information on relevant hazards
  - Eliminate or reduce exposure to such hazards, with the expectation that there will be a reduction in risk.

• **Risk-Based**
  - Decisions, standards and actions are based on specific knowledge of risks
  - Achieve an established level of health protection and should be explained and validated in these terms
Risk based approach as an added value to food safety management systems

- To link food safety control to public health protection
- To evaluate how public health goals can be met
- To demonstrate/evaluate the equivalence of different control measures
- To compare the effectiveness of potential control measures
- In situations where a series of options is necessary to control risks
Current Activities
   - EFSA self-mandate.
   - Draw conclusions and identify issues of public and animal health importance.
   - Recommend (if appropriate) options to improve both public health and animal health in the Community.
   - Suggest improvements for monitoring and reporting procedures.

2. Monitoring methods in animal populations and foodstuffs optimal from health point of view
   - EFSA mandate
   - Verotoxigenic *Escherichia coli* (VTEC)
   - *Yersinia* spp.
   - Toxoplasma
3. **Microbiological Risk Assessment in feedingstuffs for food-producing animals.**

   - EC mandate.
   - Hazard identification (i.e. bacteria pathogenic for humans and/or animals).
   - Contribution of *Salmonella* contamination in feedingstuffs towards its prevalence in animals and humans. Contamination of food produced from those animals.
   - Quantification of the effect of control options (e.g. GHP, GMP, HACCP principles).
   - Identify appropriate areas to set microbiological criteria and/or targets for feedingstuffs, as well as elements to be taken into account (e.g. sampling plans).
4. Quantitative Microbiological Risk Assessment on *Salmonella* in meat and meat products.
   - EC mandate.
   - Evaluation of the relative contribution of different meat categories to cases of food-borne *Salmonella* spp. infections in humans.
   - Impact of the main factors along the food chain affecting prevalence, growth and transmission of *Salmonella* spp.

5. Updating scientific data on *Listeria monocytogenes* in ready to eat foods, and scientific advice on the establishment of different levels for *L. monocytogenes*.
   - EC mandate.
   - Update scientific knowledge related to *L. monocytogenes* in ready-to-eat foods.
   - Provide scientific advice on the EU position for discussion on *L. monocytogenes* held by the Codex Committee on Food Hygiene
Thank you for your attention

BIOHAZ Panel as EFSA is committed to independency and transparency

THANK YOU!!!

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