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20 June 2022

# EFSA Scientific Opinions on Meat inspection

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# Published Scientific Opinions

- **Modernisation of meat inspection** (2011 – 2013)
  - EFSA publishes **six scientific opinions** on public hazards linked to meat inspection.
  - Considering domestic swine, poultry, bovine, domestic sheep and goats, farmed game and domestic solipeds.
  - EFSA ranks hazards and recommends possible improvements or alternative methods for meat inspection at EU level.
- **Delayed meat inspection** (2020)
  - EFSA evaluates the potential effects of delayed post-mortem inspection of ungulates on public health and monitoring of animal health and welfare.

# Modernisation of meat inspection in the EU

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# Terms of reference

- Identify and **rank main public health (PH) risks** addressed by meat inspection
- Assess **strengths and weaknesses** of the current methodology and recommend alternative methods
- Recommend **additional inspection methods** in case other previously not considered hazards have been identified
- Recommend possible **alternative methods** and adaptations of inspection methods that provide an equivalent level of protection

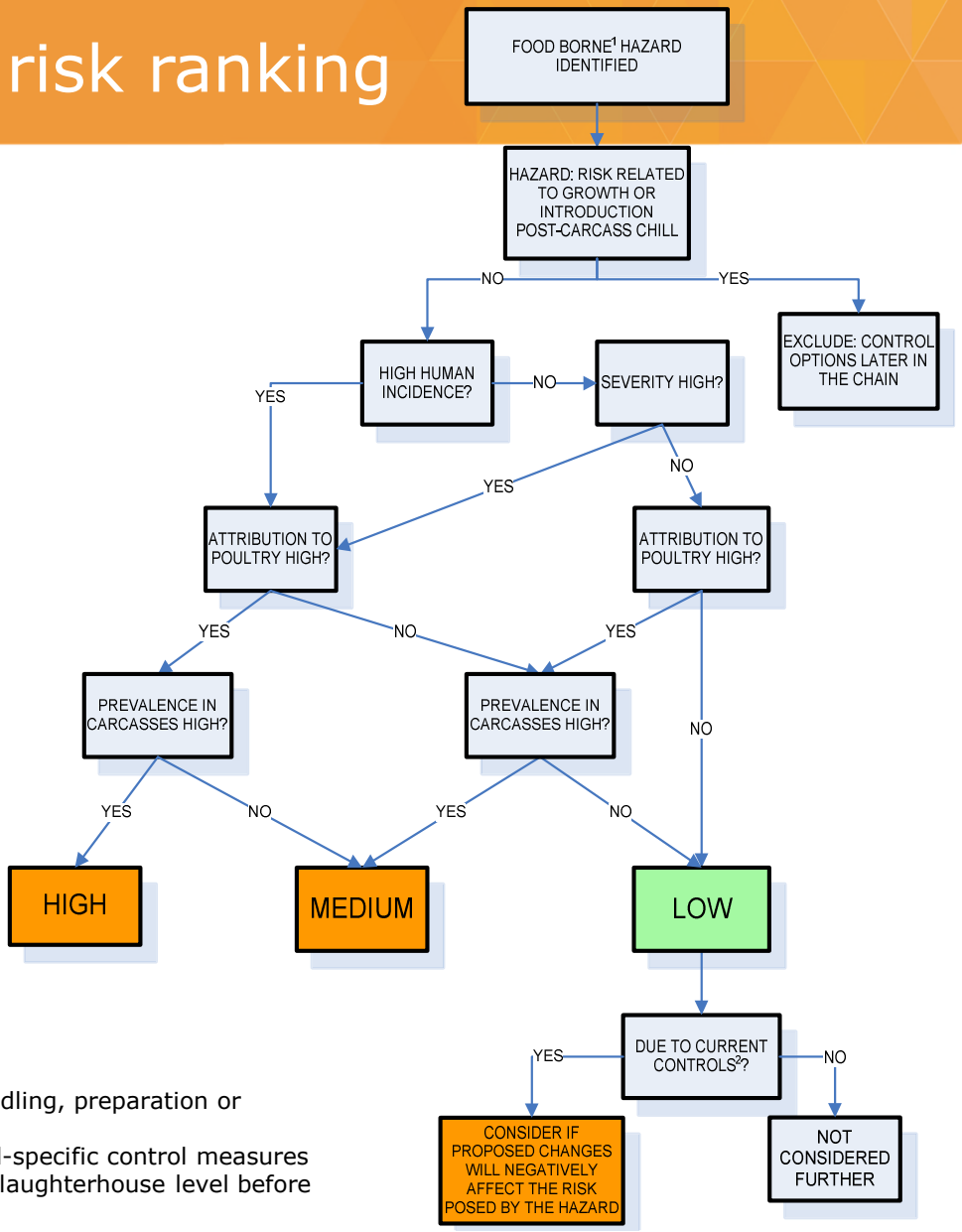
# Approach taken by BIOHAZ panel

(not showing assessments from AHAW and CONTAM Panels)

- Hazards were ranked qualitatively using **a decision tree**, based on:
  - incidence and severity in humans,
  - prevalence on carcasses,
  - meat from these species as a risk factor for human disease

  →**Resulting in a shortlist of hazards**
- Following an assessment of current methods of meat inspection, alternatives/improvements were recommended

# Decision tree for risk ranking




[1] Risk of infection through handling, preparation or consumption of poultry meat.
[2] Current controls: any hazard-specific control measures implemented at farm and/or slaughterhouse level before chilling of the carcasses.

| Species | Main biological hazards |
|---|---|
| Swine | *Salmonella, Toxoplasma, Trichinella* and *Yersinia* |
| Poultry | *Campylobacter, Salmonella,* ESBL-AmpC[1] carrying *Escherichia coli* and *Salmonella* |
| Cattle | Verocytotoxin-producing *E. coli* (VTEC), *Salmonella* |
| Sheep and goats | VTEC, *Toxoplasma* |
| Solipeds | *Trichinella* |
| Farmed game (Deer) | *Toxoplasma* |
| Farmed game (Wild boar) | *Salmonella, Toxoplasma* |
| Farmed game (Reindeer, rabbits and ostriches) | None |

[1] Bacteria carrying extended spectrum β-lactamase /AmpC genes

# Strengths & Weaknesses of current meat inspection?

>Food chain information (FCI) provides information on disease occurrence and veterinary treatments, enabling a **focused inspection** of animals with problems;

>*Ante-mortem* inspection allows the detection of observable **abnormalities** and of animals **heavily contaminated with faeces**;

>*Post-mortem* inspection enables the detection of **carcass faecal contamination**, which is an indicator of slaughter hygiene.

>**The use FCI for food safety purposes is limited** because the data that it contains is very general and does not address specific hazards of public health importance;

>Current *ante-* or *post-mortem* visual inspection are **not able to detect any of the public health hazards identified as the main concerns** for food safety;

>Palpation and incision techniques used during *post-mortem* inspection can cause **bacterial cross-contamination.**

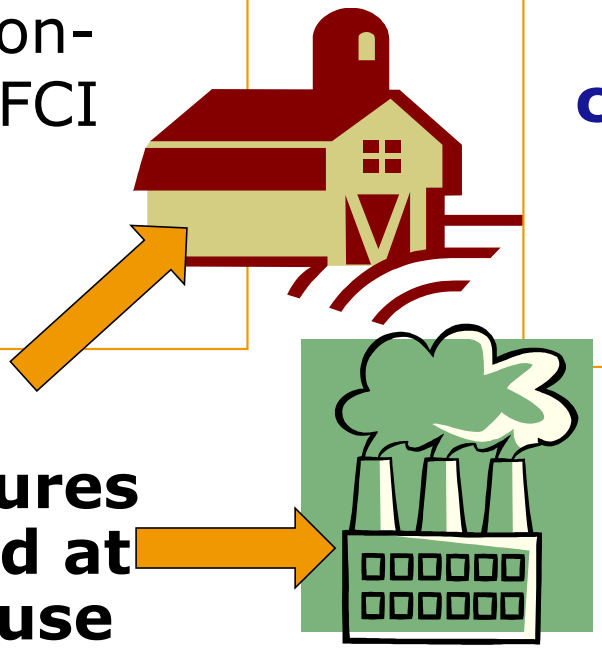
# Selected conclusions on hazards currently not covered by meat inspection

- To ensure effective control of the hazards of relevance, a **comprehensive meat safety assurance**, combining measures applied on-farm and at-abattoir, is necessary.
- A prerequisite for this system is **setting targets** for these hazards to be achieved by food business operators at carcass level.
- To meet these targets, a variety of control options for the main hazards are available, at both farm and abattoir level.

# Integrated Meat Safety Assurance System

**1. Risk-Categorisation of batches/herds/flocks /farms for the main hazards:** based on on-farm indicators and FCI

**2. Risk-Categorisation of slaughterhouses according to their capacity to control the hazard:** based on data from process hygiene assessments, HACCP



**3. Control measures both on farm and at the slaughterhouse**

8.3.2014 EN Official Journal of the European Union L 69/99

**COMMISSION REGULATION (EU) No 219/2014**

**of 7 March 2014**

**amending Annex I to Regulation (EC) No 854/2004 of the European Parliament and of the Council as regards the specific requirements for post-mortem inspection of domestic swine**

**(Text with EEA relevance)**

(5) In view of the EFSA Opinion, it is appropriate to amend the specific requirements for the post-mortem inspection of domestic swine set out in Part B of Chapter IV of Section IV of Annex I to Regulation (EC) No 854/2004.

(6) Where the epidemiological or other data from the holding of provenance of the animals, the food chain information or the findings of ante-mortem inspection or post-mortem visual detection of relevant abnormalities indicate possible risks to public health, animal health or animal welfare, the official veterinarian should have the possibility to decide which palpations and incisions must be carried out during post-mortem inspection in order to decide if the meat is fit for human consumption.

# Evaluation of public and animal health risks in case of a delayed post-mortem inspection in ungulates

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# Terms of reference

EFSA is asked to assess the effectiveness of PMI (in terms of its sensitivity in detecting the diseases/conditions listed below) when carried in both the following delays:

- a) up to 24 hours after slaughter or arrival in the game-handling establishment, or
- b) up to 72 hours after slaughter or arrival in the game-handling establishment,

in comparison to when it is carried out immediately after slaughter or arrival in the game handling establishment.

# Terms of reference

- Animal diseases Art. 5 Reg (EU) 2016/429 in all ungulates
- Septicaemia, pyaemia, toxaemia, viraemia in all ungulates
- Cysticercosis in domestic bovine animals and Suidae
- Glanders in solipeds
- Tuberculoid lesions in all ungulates
- *Brucella* in all ungulates
- *Trichinella* in Suidae and solipeds
- TSEs in cattle, sheep, goats and cervids
- *Salmonella* spp. (PHC on carcasses) in all ungulates
- Chemical residues and contaminants in all ungulates

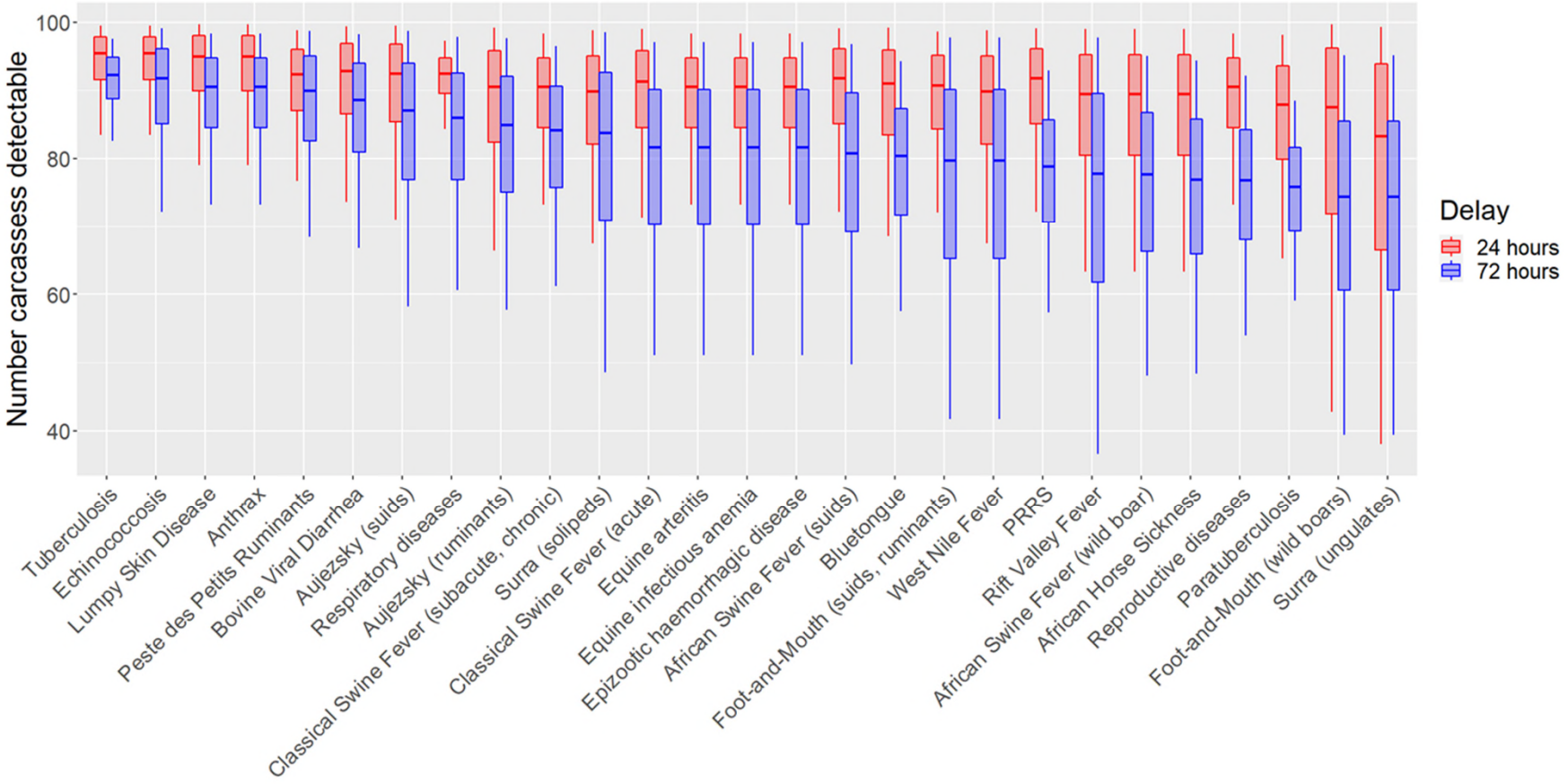
AHAW

BIOHAZ

CONTAM

# Results AHL

Consensus distribution about mean number of carcasses with a given target disease still detectable at 24-h or 72-h delayed PMI



# Cumulative probabilities of reduction in sensitivity of *Salmonella* detection after 24- and 72-h of chilled storage

| Percentage of reduction (%) | After 24 h | | After 72 h | |
|---|---|---|---|---|
| | Cumulative probability | Probability of greater reduction | Cumulative probability | Probability of greater reduction |
| **10** | 0.15 | 0.85 | 0.09 | 0.91 |
| **20** | 0.2 | 0.8 | 0.12 | 0.88 |
| **30** | 0.25 | 0.75 | 0.14 | 0.86 |
| **40** | 0.31 | 0.69 | 0.17 | 0.83 |
| **50** | 0.37 | 0.63 | 0.20 | 0.8 |
| **60** | 0.44 | 0.56 | 0.23 | 0.77 |
| **70** | 0.53 | 0.47 | 0.27 | 0.73 |
| **80** | 0.63 | 0.37 | 0.33 | 0.67 |
| **90** | 0.75 | 0.25 | 0.43 | 0.57 |

# Acknowledgments


- EFSA Panel on Biological Hazards and WGs
- EFSA Panel on Contaminants in the Food Chain and WGs
- EFSA Panel on Animal Health and Welfare and WGs
- EFSA staff from various Units
- Stakeholders that provided data on request
- European Commission

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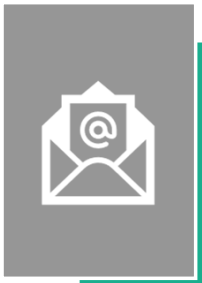

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