Participants

- Working Group Members:
  - Bojan Blagojevic
  - Declan Bolton
  - Sara Bover Cid
  - Roland Lindqvist
  - Inge Van Damme

- Hearing Experts:
  - Nino Terjung

- European Commission:
  - Not applicable

- EFSA:
  - BIOCONTAM Unit: Michaela Hempen, Maria Francesca Iulietto, Winy Messens

1. Welcome and apologies for absence

The Chair welcomed the participants. No apologies were received.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members
In accordance with EFSA’s Policy on Independence\(^1\) and the Decision of the Executive Director on Competing Interest Management\(^2\), EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. **Scientific topic(s) for discussion**

   **4.1. Scientific opinion on the microbiological safety of aged meat\(^3\)**

   The WG provided feedback from the BIOHAZ Panel meeting on 15/16 September 2021, in particular on the discussion of the draft protocol, which was accepted by the Panel.

   The hearing expert, Dr. Nino Terjung, gave a presentation on current practices on dry and wet aging, based on the results of a published review article (Terjung et al., 2021).\(^1\)

   The results of the literature review were discussed. It was agreed that also articles from non-EU countries will be included and that the publication year is limited to 2000-2021.

   A draft questionnaire was discussed which will be finalised and sent to competent authorities and industry associations to gather information on the conditions for dry and wet meat aging.

   The modelling approach for TORs 3 and 4 was discussed. The model will include different scenarios for the ageing process (different scenarios for both dry and wet ageing). The model choice and details will depend on the availability of data on the environmental conditions during ageing (time, temperature, pH, water activity/relative humidity).

   EFSA is requested to deliver its Scientific Opinion by December 2022.

5. **Next meetings**

   The next meeting is scheduled for 23 November 2021.

---

\(^1\) [https://doi.org/10.1016/j.meatsci.2020.108355](https://doi.org/10.1016/j.meatsci.2020.108355)


Participants

- Working Group Members:
  Bojan Blagojevic
  Declan Bolton
  Sara Bover Cid
  Roland Lindqvist
  Inge Van Damme

- Hearing Experts:
  Not Applicable

- European Commission:
  Kris De Smet (DG SANTE)

- EFSA:
  BIOCONTAM Unit: Michaela Hempen, Maria Francesca Iulietto, Winy Messens

1. Welcome and apologies for absence
The Chair welcomed the participants. No apologies were received.

2. Adoption of agenda
The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members
In accordance with EFSA’s Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management², EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Scientific topic(s) for discussion

4.1. Scientific opinion on the microbiological safety of aged meat³

The WG discussed the terms of reference and requested some clarifications from EC. It was clarified that for dry ageing beef will be included and for wet-ageing beef, pork and lamb. Meat ageing done at private homes is excluded from the assessment. The end point of the assessment is the end of shelf-life. There is no clear definition of ‘standard fresh meat’ and the differentiation between maturation of ‘standard fresh meat’ versus ‘prolonged’ ageing. Hence, the WG will provide a definition for the purpose of the assessment. It was further agreed the assessment will include microbiological hazards that are capable of growth during the ageing process and that the comparison will be expressed as a log difference. The EC agreed with this approach.

The draft protocol was discussed, defining assessment questions and sub-questions, and the approach and methods to answer those.

The modelling approach for TORs 3 and 4 was discussed. The model will include different scenarios for the ageing process (different scenarios for both dry and wet ageing). The model choice and details will depend on the availability of data on the environmental conditions during ageing (time, temperature, pH, water activity/relative humidity).

A questionnaire will be developed and distributed to competent authorities and industry associations to gather information on meat aging practices. In addition, hearing experts may be invited to WG meetings.

EFSA is requested to deliver its Scientific Opinion by December 2022.

5. Next meetings

The next meeting is scheduled for 21 September 2021.

SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 1st MEETING OF THE WORKING GROUP ON MICROBIOLOGICAL SAFETY OF AGED MEAT

WEB-conference, 10 May 2021

(Agreed on 17 May 2021)

Participants

- Working Group Members:
  Bojan Blagojevic
  Declan Bolton
  Sara Bover Cid
  Roland Lindqvist
  Inge Van Damme

- Hearing Experts:
  Not Applicable

- European Commission and/or Member States representatives:
  Not Applicable

- EFSA:
  BIOCONTAM Unit: Michaela Hempen, Maria Francesca Iulietto, Winy Messens

1. Welcome and apologies for absence

The Chair welcomed the participants. No apologies were received.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members
In accordance with EFSA’s Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management², EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Scientific topic(s) for discussion

4.1. Scientific opinion on the microbiological safety of aged meat³

Post-mortem ageing (or ripening or conditioning) is a natural process when meat is subjected to controlled refrigerated storage conditions. It implies cold storage of fresh muscle far beyond the onset of rigor mortis and the enzymatic and physico-chemical modifications that confers the typical meat characteristics (in particular tenderness and flavour) to the skeletal muscles as in the case of the conventional maturation of carcases. While meat from any species could be aged, post-mortem ageing is generally limited to beef, due to the relative youth of pork, lamb, and veal at the time of slaughter. The length of the process is variable, but routinely 14 days are considered the minimum period to obtain the typical characteristics of the aged meat. The aim of meat ageing is to allow and enhance the palatability of meat according to consumers’ expectations in terms of meat characteristics (i.e. improving the tenderness, juiciness and flavour). There are two types of ageing techniques: dry ageing and wet ageing.

Meat for ageing must be derived from carcases that are considered fit for human consumption after the ante-mortem and post-mortem inspections. However, such inspection, does not routinely detect most public health microbiological hazards.

The European Commission asks EFSA to deliver a scientific opinion on the impact of prolonged ageing of meat using the dry-ageing process for beef and the wet-ageing process for ungulates in comparison with standard fresh meat. More specifically, EFSA is asked to provide an overview of the current practices for dry-ageing and wet-ageing of meat, to identify public health-relevant microbiological hazards and spoilage bacteria occurring in the process, to assess the impact that dry-ageing and wet-ageing could have on the load of public health-relevant microbiological hazards and spoilage bacteria, to provide conditions that would result in a similar or lower load, and to recommend additional good hygiene practices specific to the production and storage of dry-aged and wet-aged meat. EFSA is requested to deliver its Scientific Opinion by December 2022.

The WG discussed the terms of reference and agreed that it needs to be clarified what is considered ‘standard fresh meat’ to which dry- and wet-aged meat is then compared. It was agreed that only those microbiological hazards with the capability of growth will be assessed. A general outline for the predictive microbiology was suggested considering a scenario analysis with a mean and worst-case scenario.

5. Next meetings

The next meeting is scheduled for 17 June 2021.

---