

Workshop

Animals as Bioindicators

COST Actions BeSafeBeeHoney and SafeGameMeat



The Natural History Museum of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences
Świętego Sebastiana 9 Str., 31-049 Kraków, Poland

Join online

<https://bundesinstitutfuerrisikobewertung.webex.com/bundesinstitutfuerrisikobewertung/j.php?MTID=ma666bf5b67cc5adb9895606f3aedd9c5>

This joint event brings together the main stakeholders from the COST Actions BeSafeBeeHoney (CA22105) and SafeGameMeat (CA22166) to explore the role of animals as bioindicators of environmental quality, ecosystem health, and food safety. Honeybees, wildlife, and game species are increasingly recognized not only for their ecological and economic importance, but also as sensitive sentinels of anthropogenic pressures and ecosystem changes.

By fostering interdisciplinary dialogue, this event aims to identify common challenges, promote collaborative research, and support the development of evidence-based policies across the food safety, animal health, and environmental protection sectors.

Logistical information:

The museum is situated in the heart of Krakow's tourist centre. Most attractions are within walking distance, so it's definitely worth booking accommodation nearby. The range of accommodation options is quite broad, and for those staying further from the centre, public transport is available and works well.

Krakow's airport is located about 14 km from the city centre. It's accessible via public transport, and there are regular taxis as well as Uber, which should be slightly cheaper than standard taxis.

This publication is based upon work from COST Actions BEEkeeping products valorization and biomonitoring for the SAFETy of BEEs and HONEY (BeSafeBeeHoney) 22105 and Safety in the Game Meat Chain (SafeGameMeat) 22166, supported by COST (European Cooperation in Science and Technology).

COST is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.



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Workshop Program

DAY 1 - 16th September 2025

Moderators of the event: Anneluise Mader and Andreia Freitas

12:45 am Registration

1:15 pm Opening Session

- Welcome by COST Action Chairs with introduction to BeSafeBeeHoney and SafeGameMeat objectives
- Importance of bioindicators in One Health context

1:30 pm Session 1. Animals as Sentinels of Environmental and Food Safety
Chair: Jana Rupp

Naim Deniz (Turkey) - Antimicrobial resistances in wildlife (how to evaluate and possible impacts) - One Health approach?

Filip Franeta (Serbia) - The silent decline of pollinators: Hidden threats to agriculture and biodiversity.

Benjamin Anabaraonye (Nigeria) - Animals as Sentinels of Environmental Health and Food Safety: A Case Study of Nigeria - ONLINE

Maciej Durkalec (Poland) - Tracking toxic elements through wildlife

3:30 pm Coffee break

4:00 pm Session 2. Honeybees and Hive Products as Bioindicators
Chair: Ivana Varenina

Rahman Nurković (Bosnia and Herzegovina) - Honeybees and beehive products as bioindicators of environmental pollution

Damir Pavliček (Croatia) - Biomonitoring of environmental pollution using beehive matrices: a case-study from Croatia

Yamina Haider (Algeria) - Honey Bees (*Apis mellifera intermissa*) as Bioindicators of Pathogen Exposure in Mediterranean Agroecosystems - ONLINE

Ivana Tlak Gajger (Croatia) - Challenges in modern beekeeping are influenced by environmental factors and managing practices

6:00 pm End DAY 1

DAY 2 - 17th September 2025

9:00 am **Session 3. Wildlife and Game Species as Environmental Sentinels** *Chair: Maciej Durkalec*

Malgorzata Warenik (Poland) - Between the snout and the antlers: which mammal is better at indicating environmental contamination?

Helle Bernstorf Hydeskov (Denmark) - Scandinavian brown bears (*Ursus arctos*) as bioindicators of lead (Pb) exposure

Rafael Hernan Mateus Vargas (Germany) - To Be or Where to Be: Game Animals and the Critical Role of Habitat Characterization in Biomonitoring Studies

Susanna Draghi (Italy) - Wild mammals hunted as bioindicators of environmental pollution

11:00 am **Coffee break and group photo**

11:40 am **Session 4. Methods and Innovations: Analytical Tools and Method Standardization** *Chair: Sara Leston*

Antonio Juan García-Fernández (Spain) - Wildlife Sampling Strategies for Biomonitoring of Environmental Contaminants from a One Health Approach

Ru Wikmann (Latvia) - GIS for Pollinator Conservation and Environmental Monitoring

12:40 am **Lunch** (*self-organised, participants are encouraged to go to the city*)

2:20 pm **Session 4. Methods and Innovations: Analytical Tools and Method Standardization (continued)** *Chair: Sara Leston*

Marco Pietropaoli (Italy) - INSIGNIA-EU: Non-Invasive Environmental Monitoring with Honey Bee Colonies – Project Results

Madis Leivits (Estonia) - From Silent Forests to Public Voices: Guiding Wildlife Health to Public Awareness and Policy

3:20 pm **Coffee break**

3:50 pm **Session 5. Panel Discussion and World Café** *Chair: Marta Leite*

DAY 2 - 17th September 2025 (continued)

“From Biomonitoring to Policy: Translating Data into Action”

1. Synergies – Food Safety, Environmental Surveillance & Biodiversity Conservation
2. Shared Risks – Bees & Game Species Monitoring
3. Opportunities for joint collaborations – Publications, Projects, Events & Networks

5:30 pm **End workshop DAY 2**

7:30 pm **Social dinner (30€ per person – PLN 128)**

DAY 3 - 18th September 2025

9:00 am **Meetings**

CA22105 BeSafeBeeHoney WGs 2, 3 and 4 meetings

CA22166 SafeGameMeat Group Discussions and future collaborations

10:30 am **Coffee break**

11:00 am **Meetings**

CA22105 BeSafeBeeHoney WGs 2, 3 and 4 meetings

CA22166 SafeGameMeat Group Discussions and future collaborations

12:30 am **Lunch (self-organised, participants are encouraged to go to the city)**

2:00 pm **Meetings (only CA22105)**

CA22105 BeSafeBeeHoney WG6 meetings

Day 4 – 19th September 2025 (only CA22105)

9:00 am CA22105 Core Group and WG6 meetings

12:00 am **End**

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