WOOD SHAVINGS: From an occupational hazard in poultry facilities to a global health concern

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Introduction

- Poultry production has been found to constitute a serious threat to global health due to microbial contamination (Awad et al. 2010).
- Chicken bedding material may be an underestimated source of pathogens (Gomes et al., 2022).
- Currently, there is a lack of information concerning the impact of the bedding material used on fungal development (Gomes et al., 2022).

Objectives

- Characterize fungal exposure in poultry facilities during birds’ growth cycle

1. Sampling

- Material collection
  - Active
    - MAS-100
  - Passive
    - Surface swabs
    - EDC
  - Bedding
  - Feed

Sampling methods

Strategy

- Sampling frequency:
  - Empty pavilion
  - 1st week
  - 2nd week
  - 3rd week

- 2 Seasons:
  - Summer
  - Winter

2. Analysis

- Microbial characterization
  - Culture-based methods
    - Microbial quantification
    - (Fungi) and bacteria
    - Fungal identification
    - Fungal resistant profile
  - Molecular detection (qPCR)
    - Toxicgenic fungi
  - Metabolites assessment
    - Mycotoxins detection
  - Cytotoxicity assessment
    - Lung and kidney cells

Expected results

1. Characterize fungal exposure in poultry pavilions
2. Define guidance values of occupational exposure
3. Identify priority areas for action
4. Formulate guidelines and recommendations to prevent fungal exposure in poultry business

Conclusion

The application of the One Health approach will promote a safe environment for workers and animals in poultry facilities, and reduce environmental impact.

SDGs will be supported