Tackling Fungal Contamination for Safer Farming

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Biosafety measures are essential for maintaining animal health and workplace safety in poultry production. Poultry farm environments favor fungal growth, yet information on fungal contamination and associated health risks remains scarce [1]. This study aimed to assess fungal and mycotoxins contamination in poultry pavilions (PP) during poultries growth cycle. Sampling was conducted during winter in 14 PP, Portugal, using electrostatic dust cloths (EDC) and conventional microbiological methods to quantify fungal densities (CFU/m²/day) [2]. Isolation, identification, and determination of major mycotoxins (aflatoxins; ochratoxin A, fumonisins and zearalenone) were performed using HPLC. Results showed higher fungal loads during the 3rd week $2.96x10^2$ $CFU.m^{-2}.day^{—1}$) aligning with existing literature [3]. Regarding fungal diversity, clinically and toxicologically relevant species belonging to *Aspergillus* sp. and *Penicillium* sp. were frequently identified. To consider the prevalence of the *Aspergillus* section *Fumigati* species included in the critical priority group by the WHO priority list (2022). Regarding mycotoxins, fumonisions (B1 and B2) classified as possibly carcinogenic (IARC, group 2B) was prevalent (57% and 40% respectively). Aflatoxins, ochratoxin A and zealenone were not found.

This study evidence that PP are contaminated with mycotoxigenic fungi and mycotoxins. The identification of clinically relevant fungal species and mycotoxins even after sanitary measures, highlight gaps in biosafety protocols [4]. Given the presence of at least two mycotoxins, further studies are needed to determine their cumulative effects and develop mitigation strategies. Integrating a One Health approach is critical for reducing fungal exposure and promoting a safer farming.

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