



Fungal contamination in a university archive: an aeromycological approach

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DISTAV DIPARTIMENTO DI SCIENZE DELLA TERRA, DELL'AMBIENTE E DELLA VITA

INTRODUCTION

Museum archive of DISTAV at UniGe;

- Flooding in October 2024;
- Non-functioning air conditioning system

Signs of fungal contamination on walls and compactor covers present for the preservation of archival material

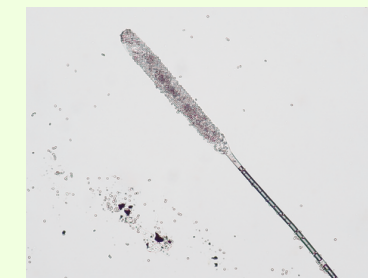
Investigate the IAQ in terms of fungal contamination:

- Potential biological risk for occupants;
- Potential biodeterioration risk for materials

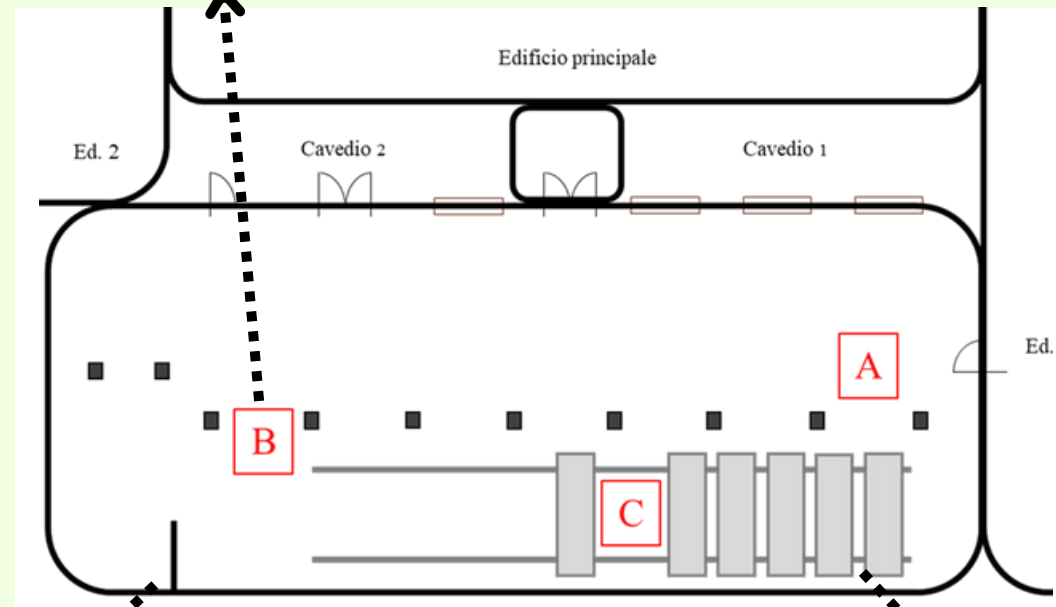


Sampling operations using the Surface Air System instrument.

Master plates and isolations



Macro- and micromorphological analysis



Implemented sampling plan: 100 L of air was sampled at 3 distinct points, each in triplicate, using three different types of culture media



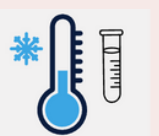
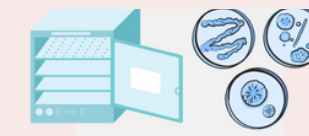
Photographs of the sampled room and objects showing clear signs of fungal contamination.



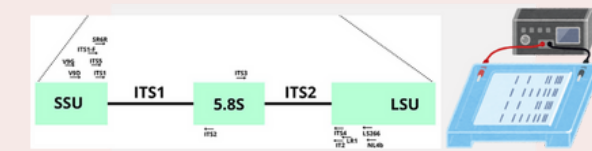
Visible fungal contamination on the compactor sheaths

MATERIALS AND METHODS

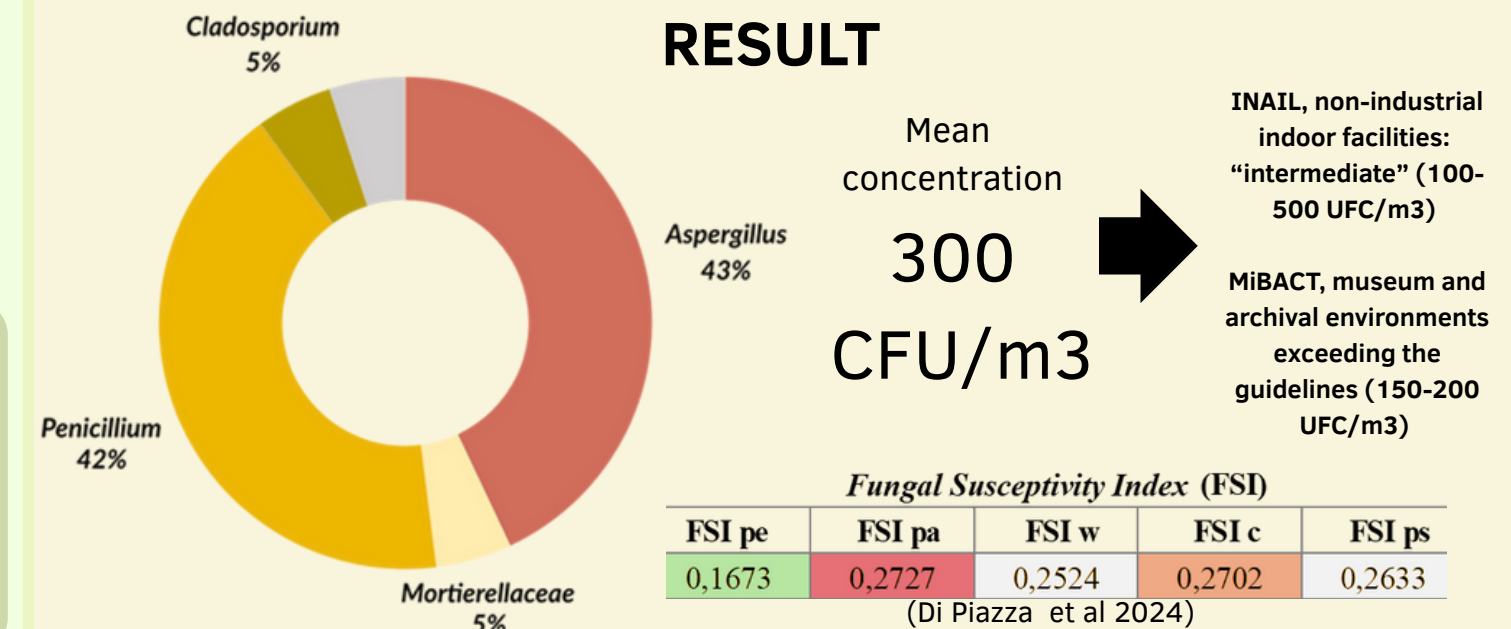
Morphological



Molecular



RESULT



CONCLUSION

The mean concentration falls within the intermediate range according to INAIL, but exceeds the MiBACT recommended thresholds

The biological hazard is minimal, chiefly linked to *Aspergillus creber* and members of the Mucorales order

The degradation of the compactor sheaths correlates with the colonization by *Penicillium citrinum* and *P. chrysogenum*.

The biodeterioration of paper-based materials and plaster poses a primary concern, driven by the activity of *Penicillium* and *Aspergillus* species

Interventions are necessary, including environmental remediation, reconditioning of the ventilation system, and continuous monitoring