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EXPOSURE TO AZOLE-RESISTANT *ASPERGILLUS FUMIGATUS* IN PORTUGUESE SAWMILLS

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Background

Sawmill workers have an increased risk of adverse respiratory health effects due to wood dust, microorganisms and their metabolites exposure [1]. Knowledge about exposure-response relationships is scarce, with information lacking regarding these transformation sector in Portugal [2]. Among microbial components, fungi and fungal spores and fragments outstand as allergens and irritants, due to their high prevalence, under the right circumstances, on wood products (planks, chips) that have been preserved [3]. *Aspergillus* species can infect the lungs, causing pneumonia-like symptoms that can progress into more severe sickness and are reported as the most common found in sawmills. Moreover, *Aspergillus* section *Fumigati* has recently entered the WHO ranking list of most critical fungal pathogens, based on the impact of the fungal disease on public health [4]. While antifungal resistance has been reported in sawmills, there are no data, to date, on occupational exposure to azole-resistant *Aspergillus fumigatus* (ARAF) in Portuguese sawmills [2].

Aims

The aim of this study is to determine the prevalence of azole-resistant *Aspergillus fumigatus*, followed by the characterization of the distribution of azole-resistance mutations in *Aspergillus fumigatus* from Portuguese sawmills. The correlation of the exposures with work tasks, handled wood products, seasonal variation will also be made to suggest the most suitable procedures to ensure sawmill workers' safety.

Methods

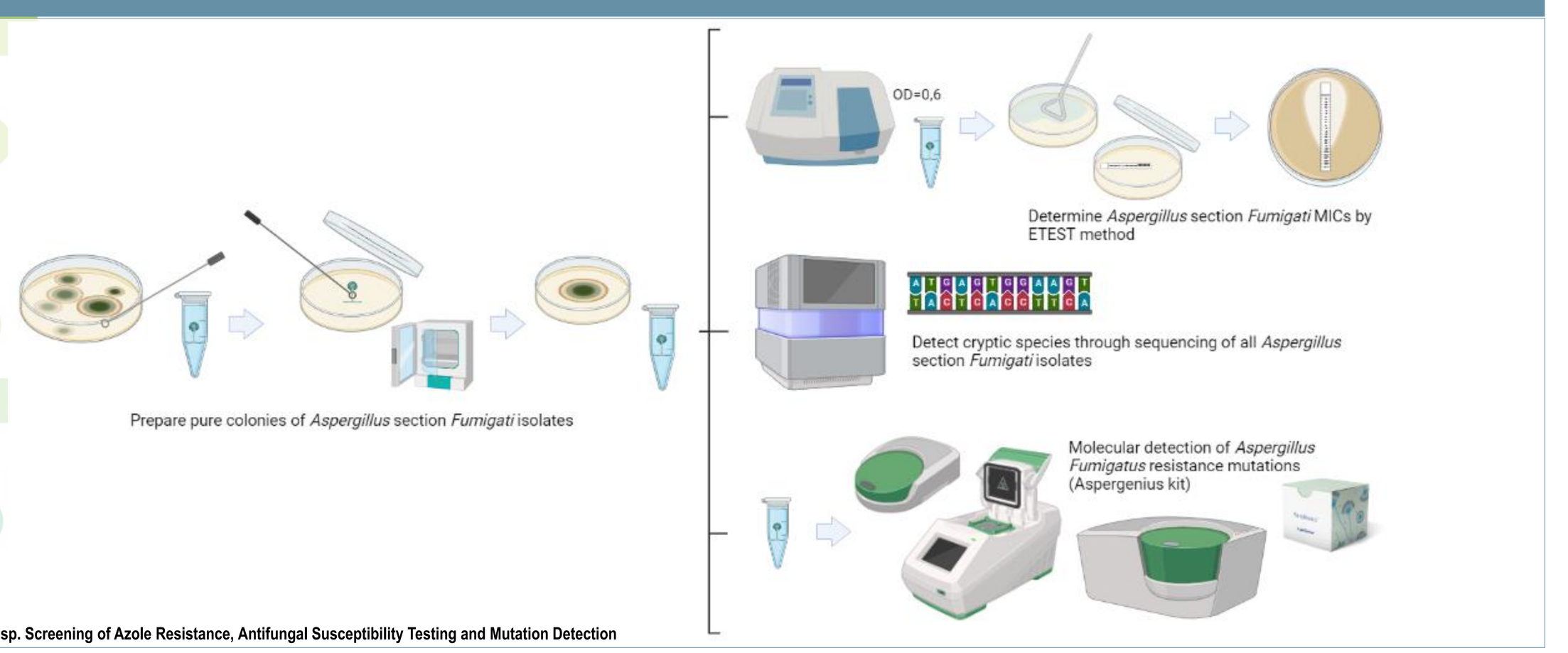

Figure 1. Aspergillus sp. Screening of Azole Resistance, Antifungal Susceptibility Testing and Mutation Detection

Conclusions

The results will fill a gap of knowledge regarding occupational exposure to *Aspergillus* section *Fumigati* in Portuguese sawmills from Lisbon Metropolitan Area, and will be spread not only through scientific publications in international peer-reviewed journals and international conferences, but also directly to sawmill companies. The project will allow corroborating the need to intervene from a Public Health perspective, allowing the suggestion of recommendations to decrease workers exposure to azole-resistant *Aspergillus Fumigatus* in sawmills, empowering the development of scientific articles with a high impact due to the novelty of the methodology and the scarce information regarding the subject in sawmills.

References

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