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# Microbial consortia selection for the development of an innovative Nature-Based Solution for air pollutants remediation

**Irina S. Moreira[1], Beatriz Novo[2], Pedro Monteiro[2], Glória Pinto[2], Paula M. L. Castro[1], Artur Alves[2], Marta Tacão[2], Marta Alves[2]***

[1] Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Rua Diogo Botelho 1327, 4169-005 Porto, Portugal
[2] Centre for Environmental and Marine Studies (CESAM) and Department of Biology, University of Aveiro, Aveiro, Portugal
*Corresponding author email: martasalves@ua.pt

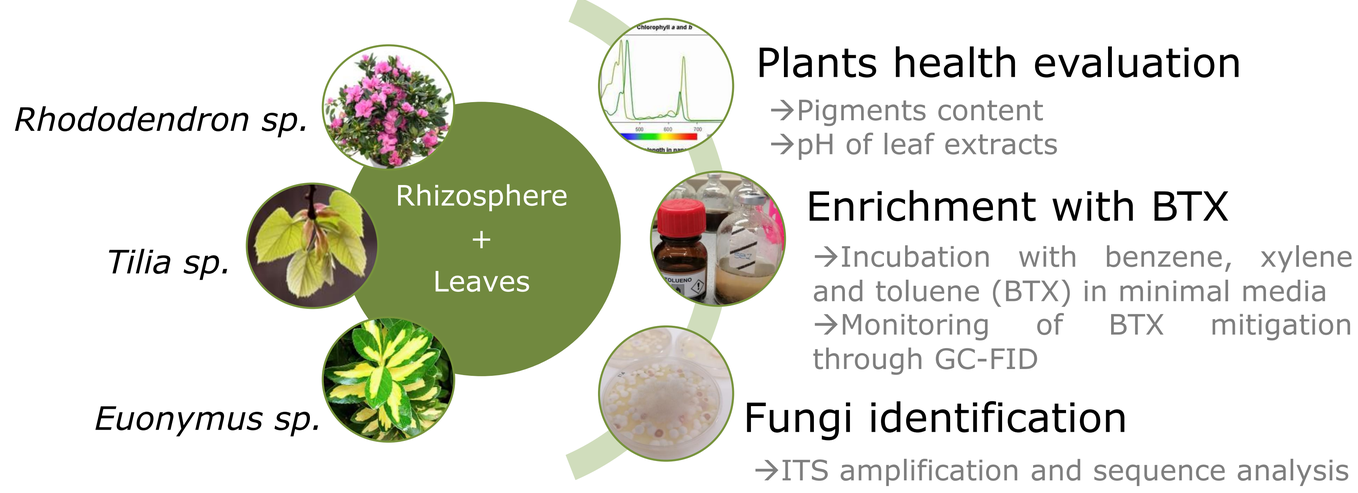
## GOAL

Despite plants natural air purification capabilities, high pollution levels in cities can hinder urban greening when tolerance levels are exceeded.

**This study aimed to develop plant-beneficial microbial consortia with the capacity to degrade air pollutants.** We envision their application as plant inoculants to promote plants' resilience in urban areas and efficiency in air purification.

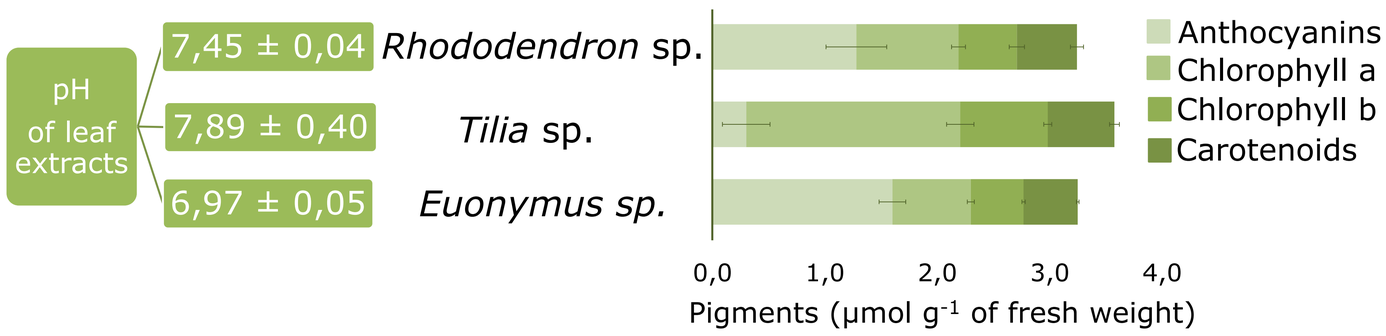
## METHODS

Porto city center with high traffic derived air pollution

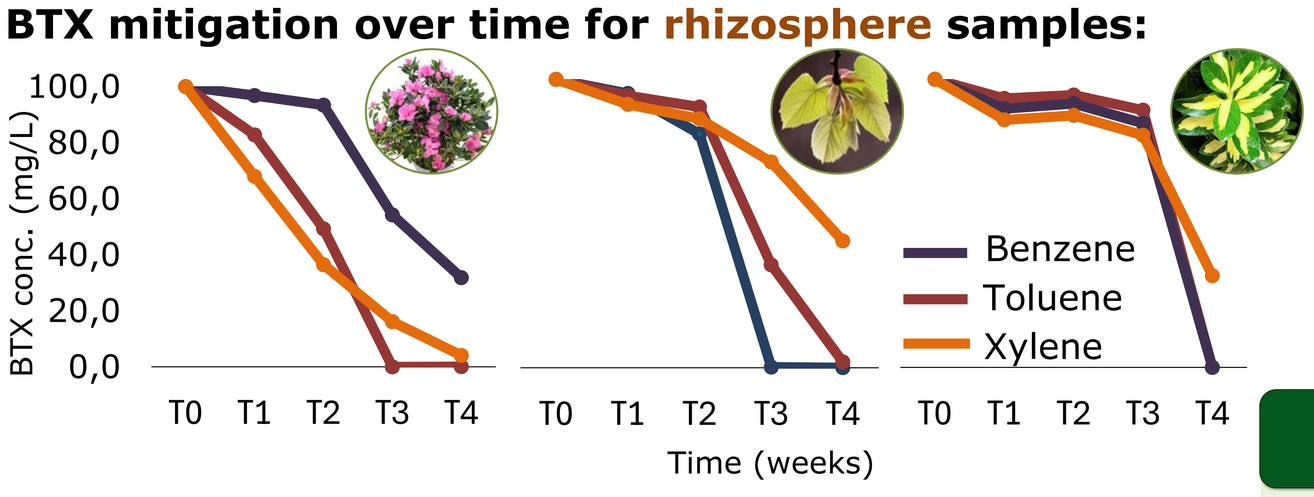



## RESULTS

### Plants' physiological parameters:



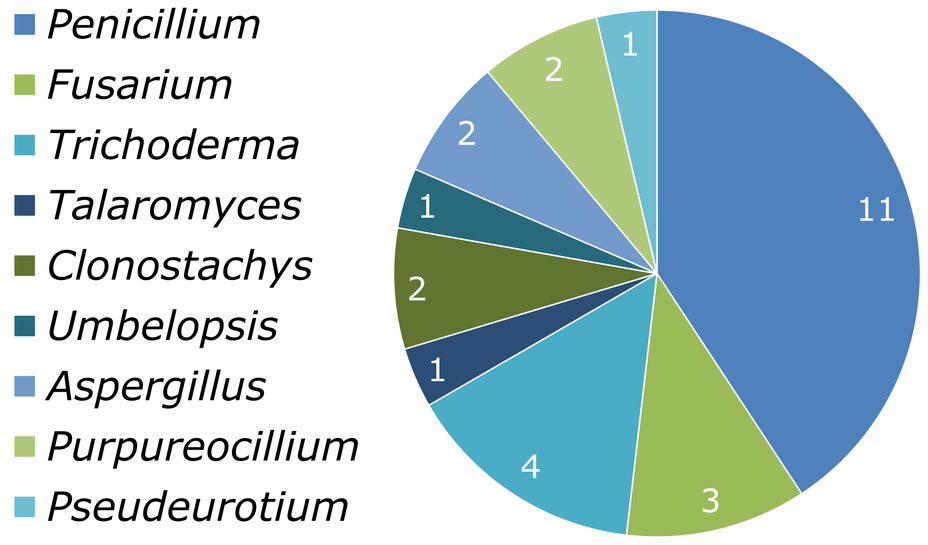

### BTX mitigation over time for rhizosphere samples:




→No BTX mitigation was observed in leaves' samples.

### Fungal groups isolated from BTX-degrading microbial consortia:

→27 fungal strains that grouped in 9 genera




## CONCLUSIONS

→ The microbial consortia from this study efficiently degraded high concentrations of BTX (300ppm) in 3-4 weeks.

→ The obtained consortia included fungal groups known for their ability to promote plant growth and have the potential to serve as plant inoculants in nature-based solutions for enhanced air remediation.

## AKNOWLEDGMENTS

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