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PLANT SCIENCE
MEETING

6th MEETING IN FUNCTIONAL BIOLOGY
AND BIOTECHNOLOGY OF PLANTS

 **2/3 November 2022**

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23 ABSTRACT SUBMISSION
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Organizing Committee:

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Long term application of a constructed wetland for phytoremediation of domestic wastewater: macrofauna biodiversity assessment

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Constructed wetlands (CW) are engineered systems, phytoremediation based, that mimic several processes (physical, biological, and chemical) that occur in natural wetlands. They comprise several components, impermeabilization liners and substrate, and as the key elements the plants and their associated microorganisms. They were thought primarily for wastewater treatment but nowadays are considered a nature-based solution of excellence in terms of flexibility of their application and services provided. In the present study, the phytoremediation potential of a real scale constructed wetland to treat wastewater from a tourism unity is addressed. The CW was implemented in 2010 at Paço de Calheiros, a tourism house integrated in a rural area. The CW was designed to be placed after a previously installed septic tank that acted as the main treatment before the CW was established. It is a horizontal subsurface flow system planted with a polyculture of *Agapanthus africanus*, *Canna flaccida*, *Zantedeschia aethiopica*, *Canna indica*, and *Watsonia borbonica*.

The aim of the study is to monitor the efficiency of a CW, after long term operation, based on phytoremediation processes, to treat the wastewater from the tourism unit. Wastewater quality will be assessed through the analysis of physic-chemical and microbiological parameters towards its reuse for irrigation purposes. The biodiversity of macrofauna communities associated to the rhizosphere of selected plants and substrate will be studied.

Acknowledgments: This research is supported by national funds through FCT-Foundation for Science and Technology within the scope of UIDB/04423/2020, UIDP/04423/2020, and UIDB/50016/2020 projects.