

Non-invasive monitoring of stress response of urban trees inoculated with EcM



CATÓLICA
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OF BIOTECHNOLOGY

PORTO

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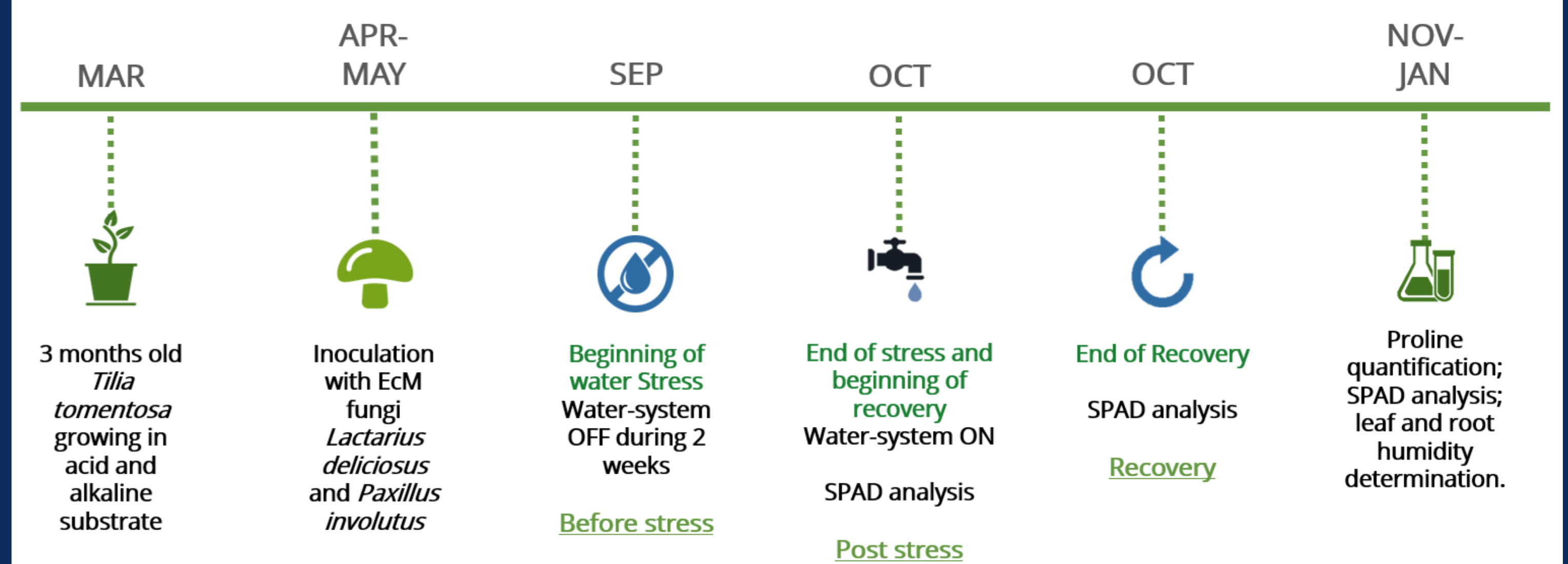
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Introduction & Aims

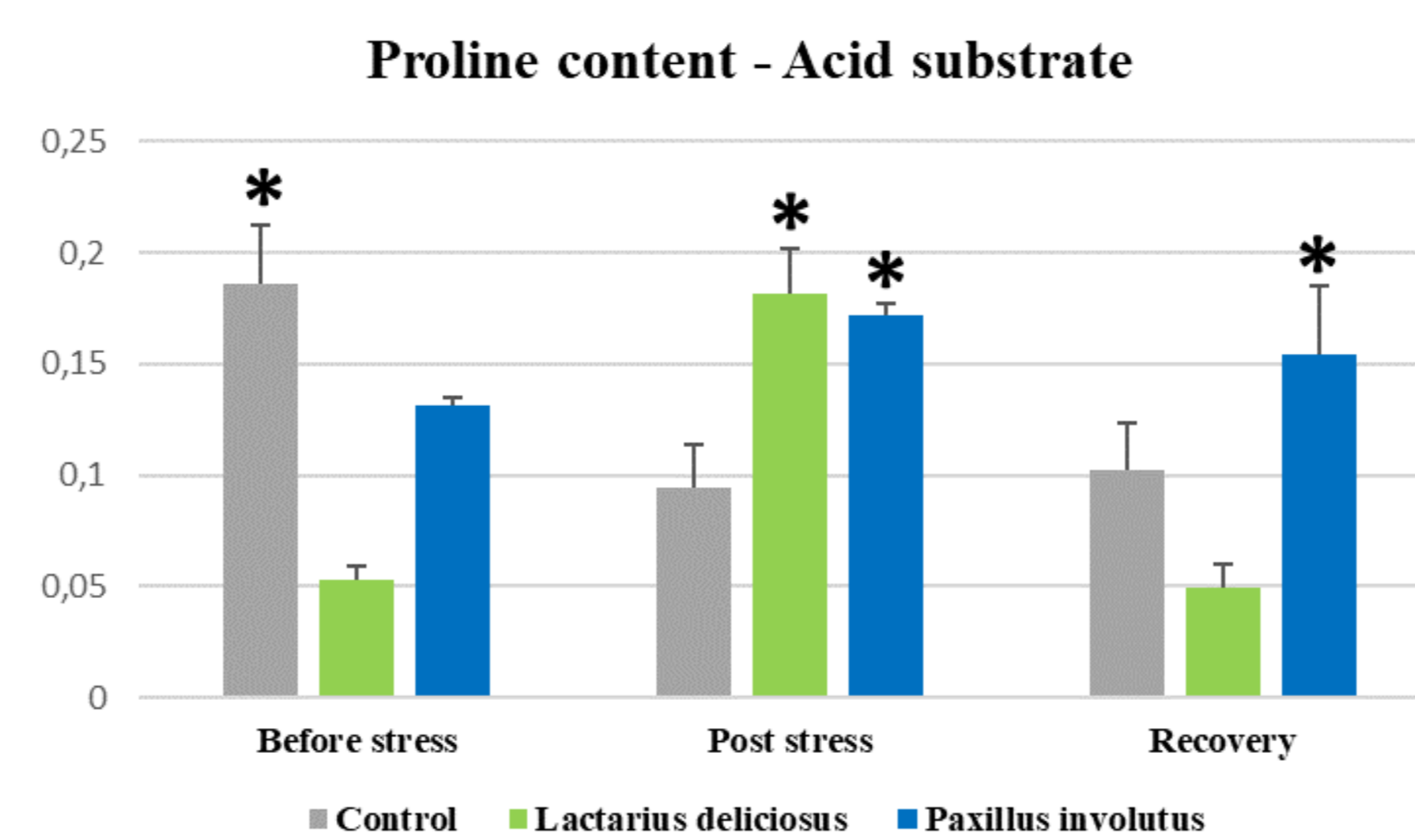
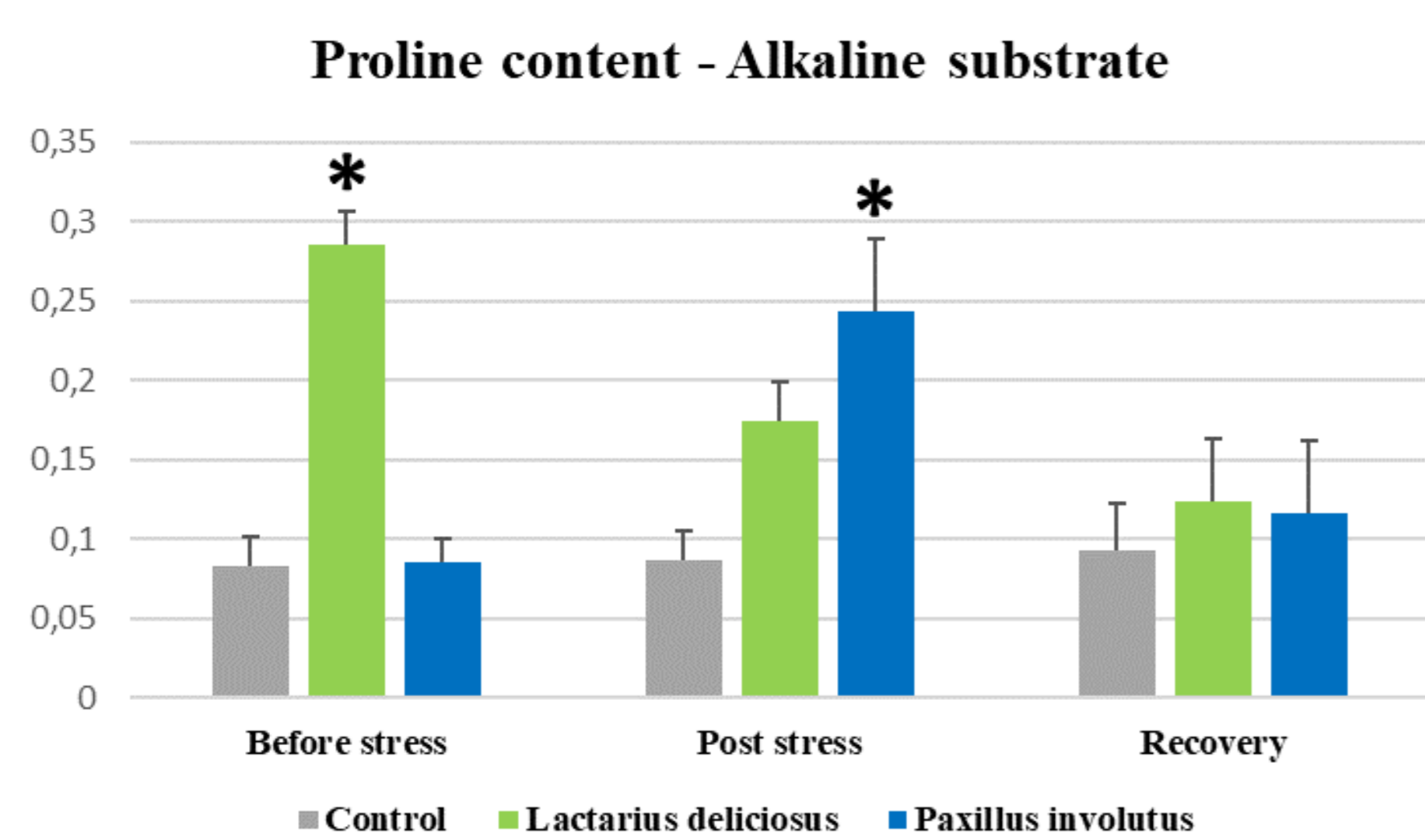


Urban trees play a key role in urban settings providing ecosystem services not only by improving the environment quality but also by contributing to population welfare and biodiversity. Ectomycorrhizal fungi (EcM) emerge as a helpful biotechnology tool for urban tree management conferring advantages to the host plant by improving its vigor and resilience under stressing conditions such as limited soil water availability. In this study the response of *Tilia tomentosa* to inoculation with EcM under a water-stress scenario was assessed.

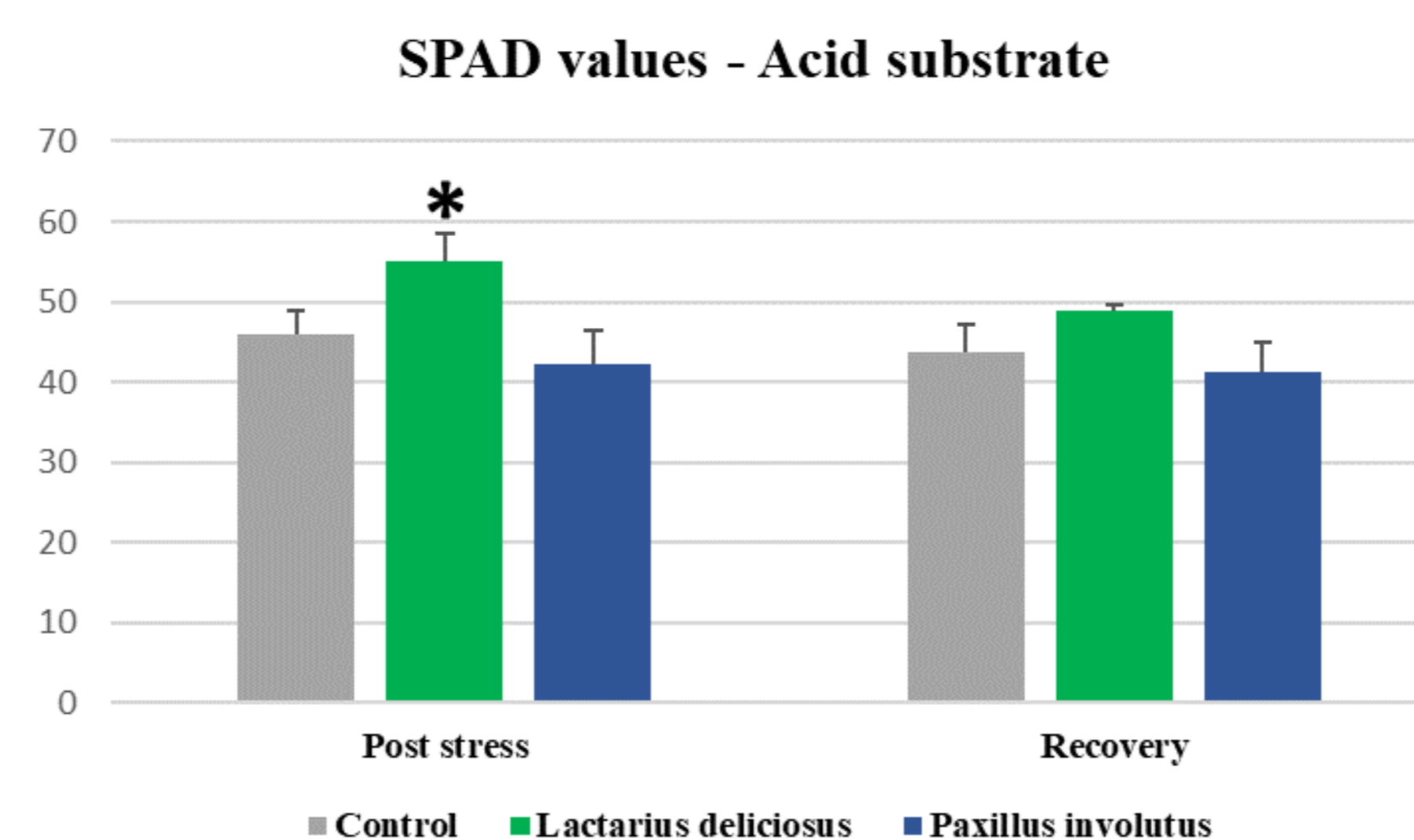
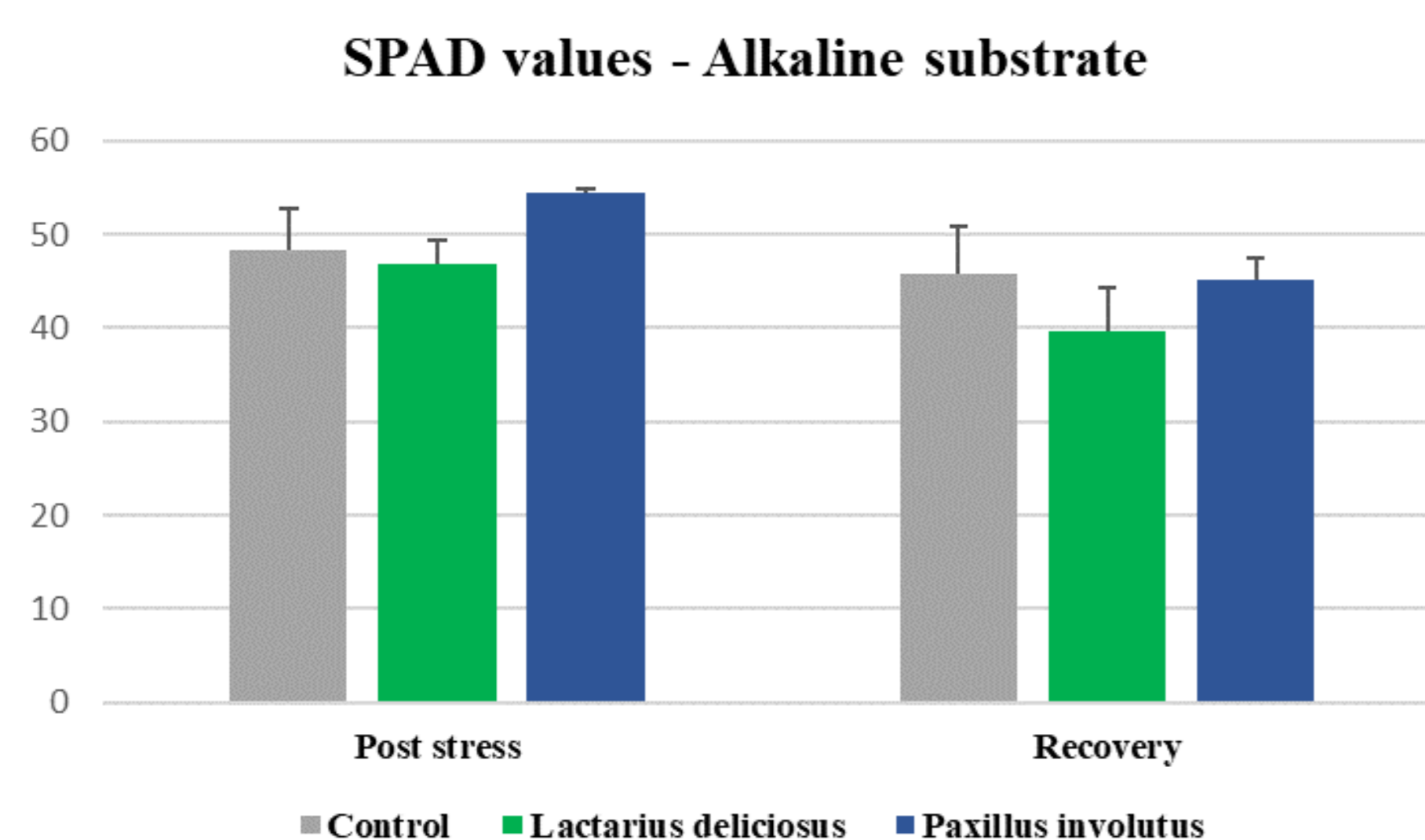
Methods



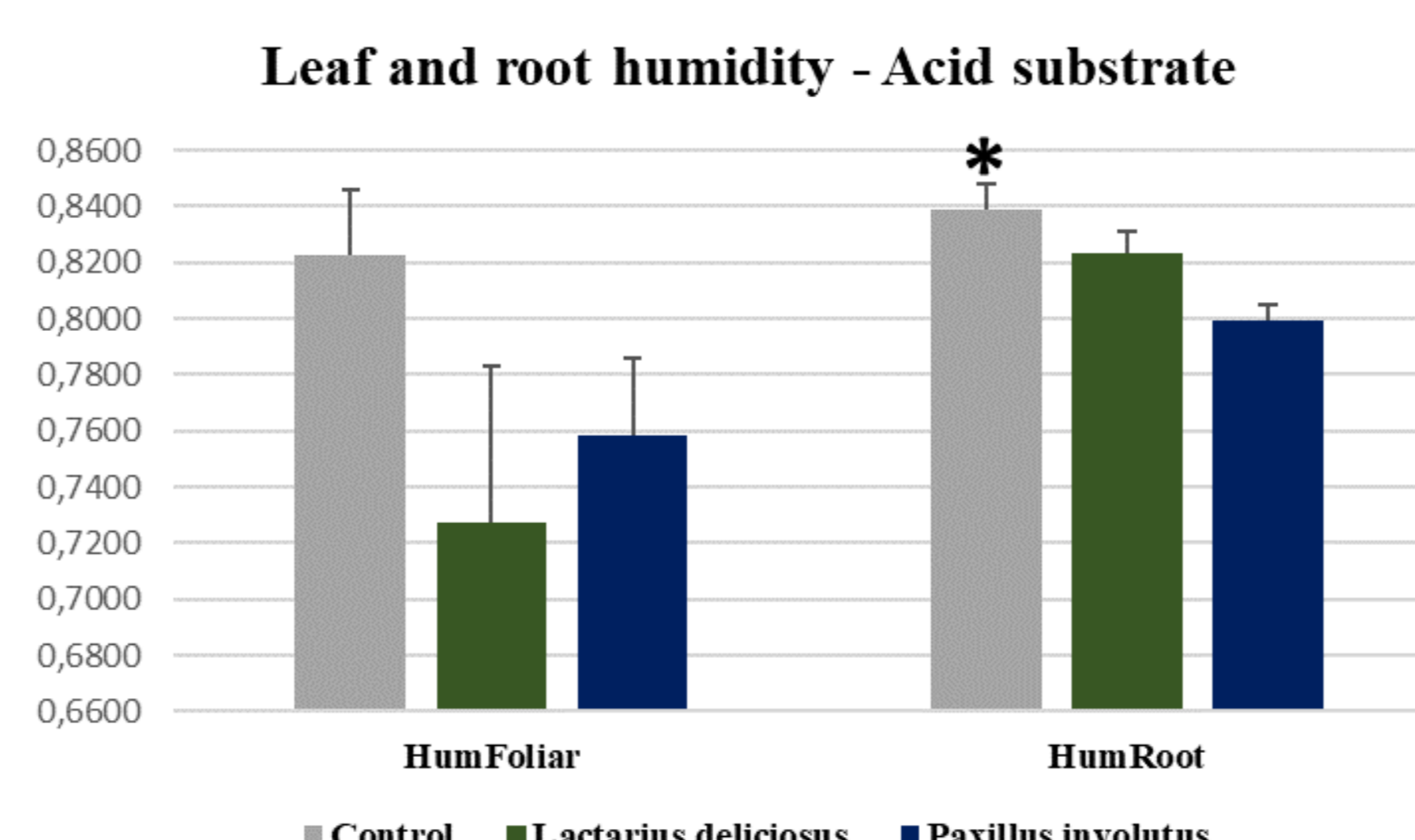
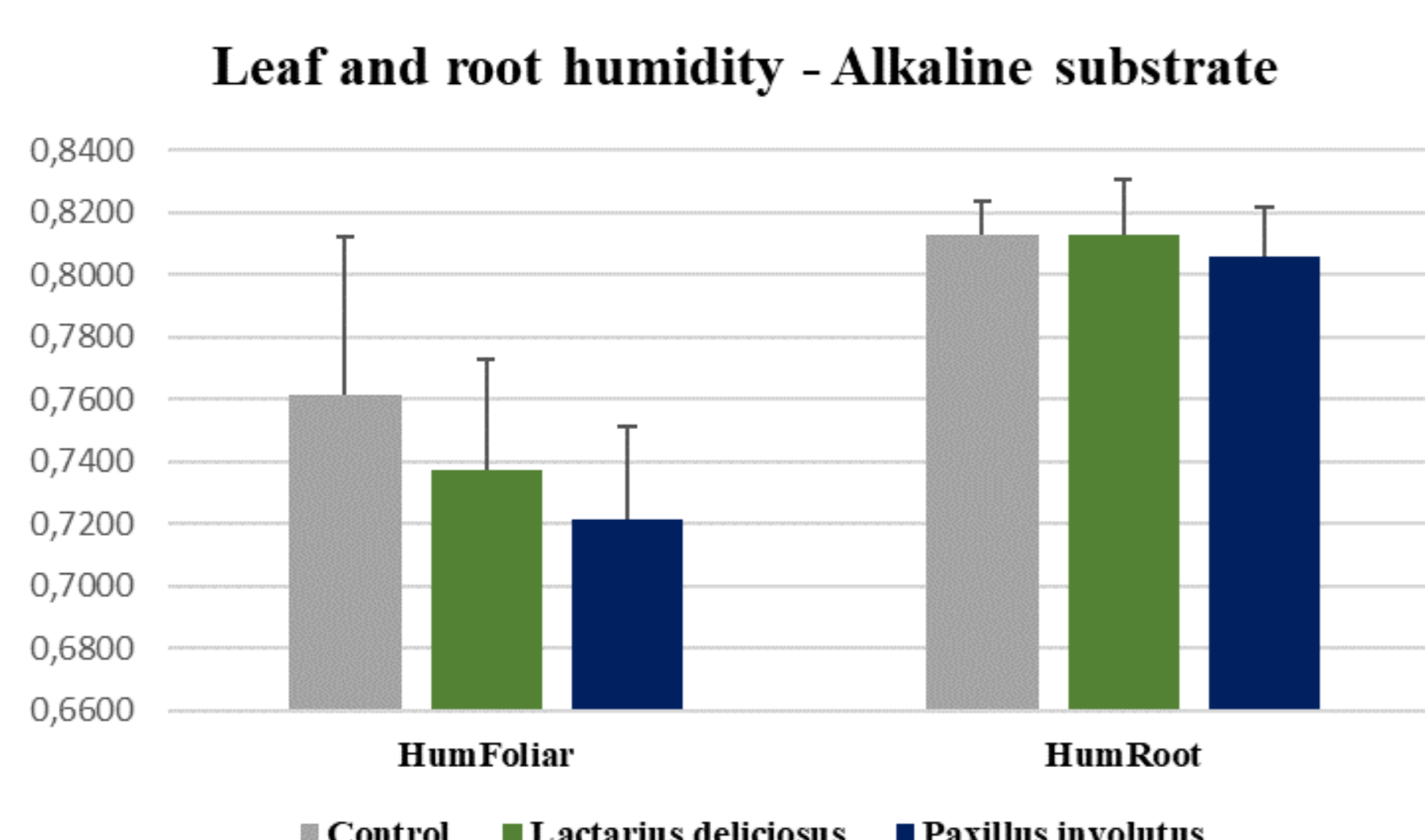
Results



Proline (mg/g) accumulation in inoculated plants emerged as a plant response to mitigate the effects of drought



Plants inoculated with *Lactarius deliciosus* presented higher SPAD values in acid substrate during drought



The control group exhibited higher leaf and root humidity (gr) when compared to inoculated plants

Conclusions

Proline content and SPAD values were increased by inoculation and can be used as bioindicators to evaluate the water-stress response and water-status of trees and represent an important contribution for the development and application of EcM-inocula to improve tree resilience and for the establishment of strategies for tree monitoring in urban context.

Acknowledgements

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