

Lotus creticus response to abiotic stress: role of plant density and soil microorganisms

Adrián Sapiña-Solano¹, Claudia Pallotti¹, Mónica Boscaiu², Francisco Collado³, Oscar Vicente¹ & Mario X. Ruiz-González¹

¹ Institute for Conservation and Improvement of Valencian Agrodiversity (COMAV), Universitat Politècnica de València, Camino de Vera s/n, 46022 Valencia, Spain, adsaso@doctor.upv.es, pallotti@bvg.upv.es, ovicente@upvnet.upv.es, maruigon@upvnet.upv.es.

² Mediterranean Agroforestry Institute (IAM), Universitat Politècnica de València, Camino de Vera s/n, 46022 Valencia, Spain, mobosnea@eaf.upv.es.

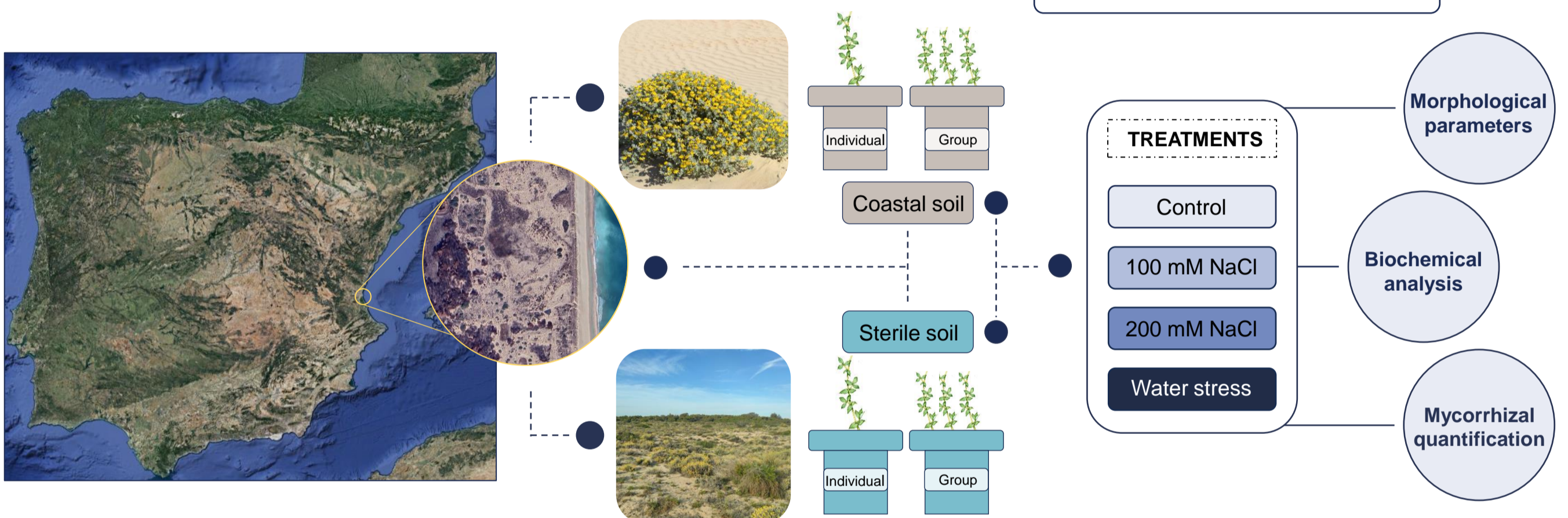
³ Servici Devesa-Albufera, Vivers Municipals de El Saler, Valencia, Spain, fcollado@valencia.es.

Lotus creticus L. is a legume of great ecological importance in dune stabilization and nutrient cycling in Mediterranean coastal ecosystems. However, climate change threatens these ecosystems, increasing pressure on the survival of *L. creticus*, which must cope with more extreme abiotic conditions¹, as well as intra- and interspecific competition. The microbial community in coastal soils, adapted to harsh environmental conditions, may offer plants an advantage in dealing with both abiotic and biotic stressors².

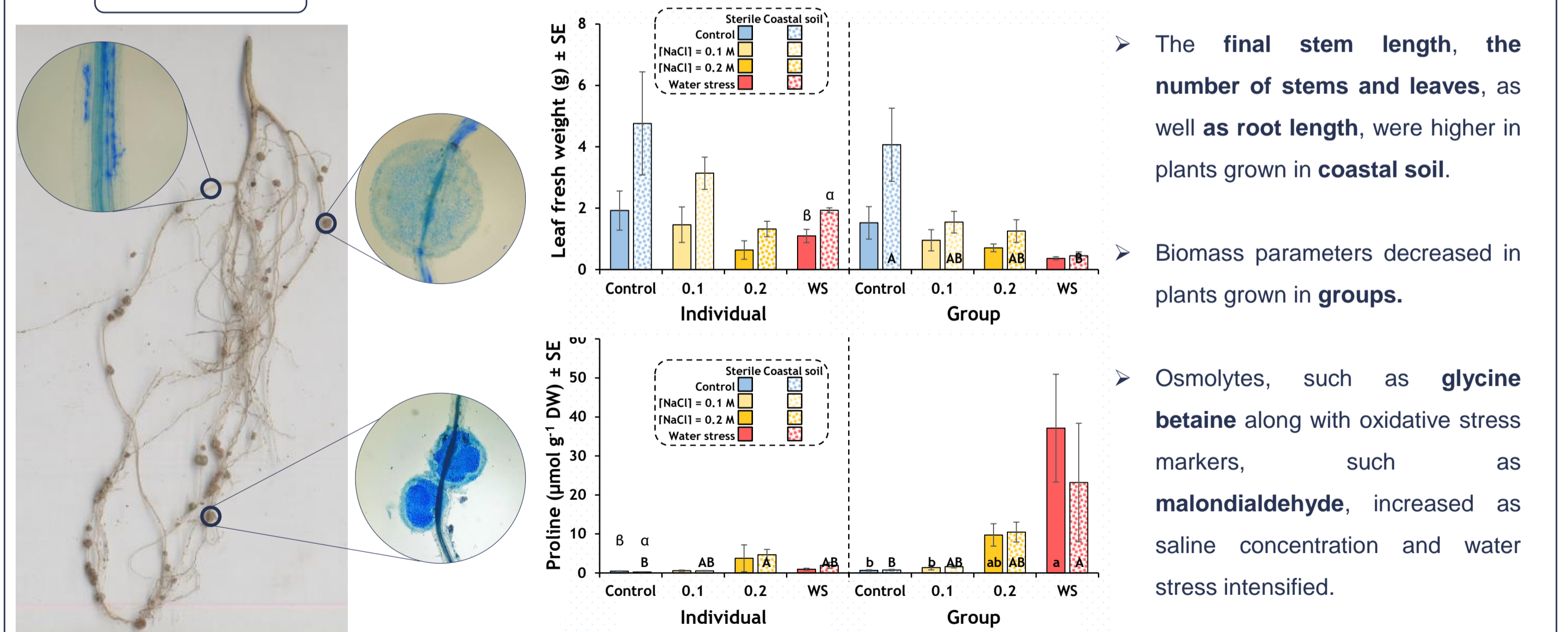
Objectives

- 1) Evaluate the effect of soil microorganisms and plant density on the biology of *L. creticus*.
- 2) Investigate the tolerance mechanisms of *L. creticus* under abiotic stress.

Materials & Methods



Results



Conclusions

L. creticus responds to saline stress by blocking chloride uptake at the root level and to water stress by increasing osmolytes, primarily glycine betaine.

Growing under high-density conditions negatively affects the biological parameters of *L. creticus*.

The presence of soil microorganisms facilitates the performance of plants when exposed to abiotic and biotic stresses.

Acknowledgements & References

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2. Yang, P., et al. 2013. *Environ Exp Bot* 86, 29-34