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## Wild edible species with phytoremediation properties

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### Abstract

High salinity is an increasing environmental problem that severely affects agriculture by both limiting crop yield and available agricultural land. United Nations Food and Agriculture Organization report that approximately 20-30% of all agricultural land is becoming saline, whereas about 8% of all salt-affected soils are human-induced. In the Mediterranean basin there are many wild species that are consumed as greens or herbs, whereas a few of them have been introduced as alternative crops (e.g. *Cichorium spinosum* L.).

In the present study, various native species (*Hymenonema graecum*, *Reichardia picroides*, *Sonchus oleraceus*, *Taraxacum officinale*, *Urospermum picroides* and *Picris echioides*) were grown under medium to high salinity levels (1.8-8 dS/m) by adding NaCl to irrigation water, in order to evaluate their tolerance under salinity stress conditions. From the results it is observed that *Reichardia picroides*, *Sonchus oleraceus* and *Urospermum picroides* could be considered as tolerant species since their yield was not affected by high salinity, whereas the Na content in leaf tissues increased with increasing salinity for all the species (except for *Urospermum picroides*) implicating accumulating mechanisms that alleviate the negative effects of salinity on plant growth. For the rest of the species, salinity affected significantly yield, especially when high levels (8 dS/m) were applied.

Therefore, these species could be a useful means to alleviate problems of saline soils by cultivating them for phytoremediation purposes, whereas the final products could be marketed as edible herbs. In this context, they could be cultivated in areas where irrigation water is of low quality due to high content of NaCl (coastal areas or areas where ground water is saline), allowing farmers to gradually improve their soils and render them available for other conventional species.

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**Keywords:** *Reichardia picroides*; *Sonchus oleraceus*; *Urospermum picroides*; phytoremediation; wild edible; salinity

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