



plants



Special Issue Reprint

Wild Halophytes

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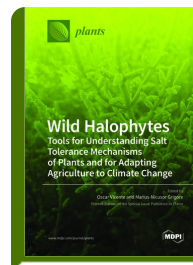
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Halophytes are a fascinating group of wild plants adapted to highly saline natural habitats, where most plant species and all our conventional crops would not survive. In fact, some halophytes can withstand even seawater salinity. In the current climate change scenario, increasing average temperatures and drought episodes contribute to the accelerated salinisation of irrigated cropland, especially in arid and semiarid regions, by the progressive accumulation in the soil of salts dissolved in irrigation water. This ‘secondary salinisation’ is one of the major causes of reducing crop yields worldwide. In this context, halophytes represent ideal experimental systems to investigate the mechanisms plants use to respond to high-salinity conditions. This knowledge will be essential for the genetic improvement of crop salt tolerance, which represents the most sensible strategy to address the abovementioned problem. Furthermore, halophytes could be the basis of a sustainable, ‘saline’ agriculture, after domestication and some breeding to improve agronomic characteristics. Then, they could be commercially cultivated for food, feed, fibre, or the production of biomolecules of industrial interest. Since they could be grown in saline land and irrigated with brackish water, they will not compete with our conventional crops for these limited resources, fertile land and good-quality water for irrigation. The articles included in this Special Issue address these different aspects of halophytes’ research, although most focus on basic studies on salt-tolerance mechanisms.



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