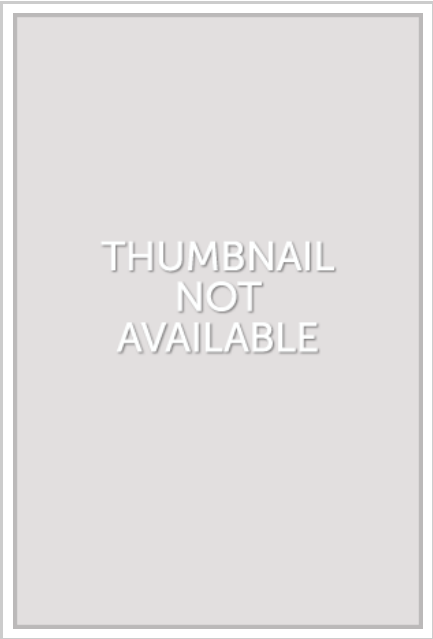

Effects of salt stress on ecophysiological and molecular characteristics of Populus euphratica Oliv., Populus x canescens (Aiton) Sm. and Arabidopsis thaliana L.

By Payam Fayyaz

Cuvillier Verlag Sep 2015, 2015. Taschenbuch. Book Condition: Neu. 211x146x17 mm. Neuware - Salt tolerance is a complex trait that involves biochemical, physiological andmorphological modifications that are regulated at the molecular level. The aim of this workwas to understand the effects of salinity on P. euphratica, a salt tolerant species. For thispurpose ecophysiological and molecular methods were applied and necessary comparisonswere conducted with P. x canescens, a salt sensitive species or A. thaliana, the model plantfor herbaceous species. The present work shows that P. euphratica under salinity is able to protect its plasma membrane and maintaine quantum yield efficiency of PSII.Molecular analysis showed that the expression levels of two genes were increased inresponse to salinity (TIL and SIS) in both P. euphratica (PeuTIL) and P. x canescens(PcaTIL). These genes were characterized to study their functions with respect to salttolerance. In both root and leaf, PeuTIL was up-regulated after salt stress and decreased to the control level within few hours. Comparison of PeuTIL and PcaTIL showed that the transcript level of TIL in P. euphratica was significantly higher than that of its homolog in P. xcanescens both under control conditions and salt stress. It has also been found that theexpression of...

Reviews

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