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Sommario/riassunto

Soil salinity is a key abiotic-stress and poses serious threats to crop yields and quality of produce. Owing to the underlying complexity, conventional breeding programs have met with limited success. Even genetic engineering approaches, via transferring/overexpressing a single 'direct action gene' per event did not yield optimal results. Nevertheless, the biotechnological advents in last decade coupled with the availability of genomic sequences of major crops and model plants have opened new vistas for understanding salinity-responses and improving salinity tolerance in important glycophytic crops. Our goal is to summarize these findings for those who wish to understand and target the molecular mechanisms for producing salt-tolerant and high-yielding crops. Through this 2-volume book series, we critically assess the potential venues for imparting salt stress tolerance to major crops in the post-genomic era. Accordingly, perspectives on improving crop salinity tolerance by targeting the sensory, ion-transport and signaling mechanisms are presented here in volume 1. Volume 2 will focus on the potency of post-genomic era tools that include RNAi, genomic intervention, genome editing and systems biology approaches for producing salt tolerant crops.
