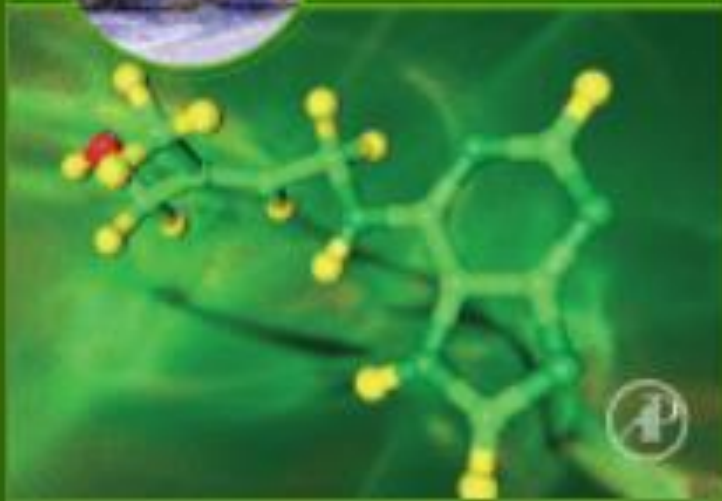


Plant Hormones in Crop Improvement



Edited by

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and Péter Poór



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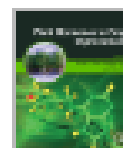
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Chapter 15 - Emerging trends in plant metabolomics and hormonomics to study abiotic stress tolerance associated with rhizospheric probiotics

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Abstract

Microorganisms present in the soil can epitomize diverse function in plants. These microbes are known as plant growth-promoting rhizobacteria or rhizospheric probiotics. They play a vital role in promoting plant wellbeing and impart prominence defense properties by releasing different metabolites and also protect plants from various biotic and abiotic stresses. Metabolomics is an approach that is used to acquire broad information of metabolites to deliver a functional benefit of the cellular state. Here, we illustrate the importance of plant metabolomics as an informative research tool for biochemical estimations underlying plant growth and improvement in responses to abiotic stresses. Plant hormones play a significant role in the plant–microbiota communication because they can contribute to microbial diversity in the endosphere and distinct root compartments or in the rhizosphere through direct or indirect interactions. Plant hormones can be released into the rhizosphere where they stimulate plant-interacting microorganisms and the root microbiome as a whole for metabolite signaling. Therefore this chapter also focuses on the hormonomic study of plants to elucidate their role against abiotic stress.