1. Record Nr. UNINA9910512167803321

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Titolo	Rhizobiology: Molecular Physiology of Plant Roots / / edited by Soumya Mukherjee, František Baluška
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2021
ISBN	3-030-84985-6
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (497 pages)
Collana	Signaling and Communication in Plants, , 1867-9056
Disciplina	581.10428
Soggetti	Botany Plant physiology Plant genetics Botanical chemistry Plant Science Plant Physiology Plant Genetics Plant Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Root apex cognition: from molecules to root-fungal networks -- Root architectural plasticity in changing nutrient availability -- Molecular physiology of nitrate sensing by roots -- Root zones work in concert in exploring heterogeneous environments and conferring tip growth -- Role of Arbuscular mycorrhizal fungi in root development with a new dimension in the root web network -- Ally or foe: Role of soil microbiota in shaping root architecture in plants -- Role of miRNAs in shaping root architecture in higher plants -- Rooting the right way: The role of glucose signaling in regulating root development in plants -- Plant hormonal crosstalk: a nexus of root development -- Dynamic pool of nitric oxide in rhizosphere modulates root architecture, nutrient acquisition and stress tolerance in plants -- Role of nitric oxide as a double edged sword in root growth and development -- Role of plant auxin and their interplay in root development -- Interaction of cytokinin and ethylene in the regulation of primary root growth and

development -- Role of brassinosteroids in root growth and development -- Precise role of strigolactones and its crosstalk mechanisms in root development -- Crosstalk of Jasmonates with phytohormones accompanying root growth, development and microbe-interaction -- Jasmonates: A thorough insight into the mechanism of biosynthesis, signaling and action in root growth and development -- Serotonin and Melatonin: Role in rhizogenesis, root development and Signaling -- Suberin in monocotyledonous crop plants: structure and function in response to abiotic stresses -- Hitting hard times: Effect of abiotic stress on root physiology -- An approach in updating plant metabolomics in roots to tolerate anaerobic submergence stress -- Role of heavy-metal resistant bacteria isolated from rhizosphere in bioremediation and plant development -- Understanding the regulation of root development towards crop improvement towards environmental stresses -- In vitro biosynthesis of natural products inplant roots.

Sommario/riassunto

This book discusses the recent advancements in the role of various biomolecules in regulating root growth and development. Rhizobiology is a dynamic sub discipline of plant science which collates investigations from various aspects like physiology, biochemistry, genetic analysis and plant–microbe interactions. The physiology and molecular mechanisms of root development have undergone significant advancements in the last couple of decades. Apart from the already known conventional phytohormones (IAA, GA, cytokinin, ethylene and ABA), certain novel biomolecules have been considered as potential growth regulators or hormones regulating plant growth and development. Root phenotyping and plasticity analysis with respect to the specific functional mutants of each biomolecule shall provide substantial information on the molecular pathways of root signaling. Special emphasis provides insights on the tolerance and modulatory mechanisms of root physiology in response to light burst, ROSgeneration, agravitrophic response, abiotic stress and biotic interactions. Root Apex Cognition: From Neuronal Molecules to Root-Fungal Networks and Suberin in Monocotyledonous Crop Plants: Structure and Function in Response to Abiotic Stresses” are available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.