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## Advances in Ecophysiology of Root Systems- Environment Interaction

**Edited by: Lorenzo Rossi**

Despite their significance, root physiology and root function remain relatively underexplored in plant science research. Soil microorganisms, including mycorrhizae and bacteria, exert profound effects on nutrient cycling, root development, soil health, and overall plant productivity. In addition, different propagation methods can significantly influence root system architecture, further highlighting the complexity of underground dynamics. Various factors, such as nutrient levels, organic matter content, and management practices, impact both root and soil health. Suboptimal conditions can hinder root growth and affect plant physiology, ultimately affecting agricultural productivity. Recognizing the intricate interplay between roots, soil, and environmental factors is essential for implementing sustainable agricultural practices. This Special Issue of *Plants* aimed to bridge these knowledge gaps by integrating diverse research strands and spotlighting recent advancements in the ecophysiology of root systems and their interactions with the environment. By synthesizing insights from root biology, soil science, and agronomy, this collection seeks to advance our understanding of root-soil-environment interactions, paving the way for innovative strategies with which to enhance crop resilience and productivity in an everchanging world.

