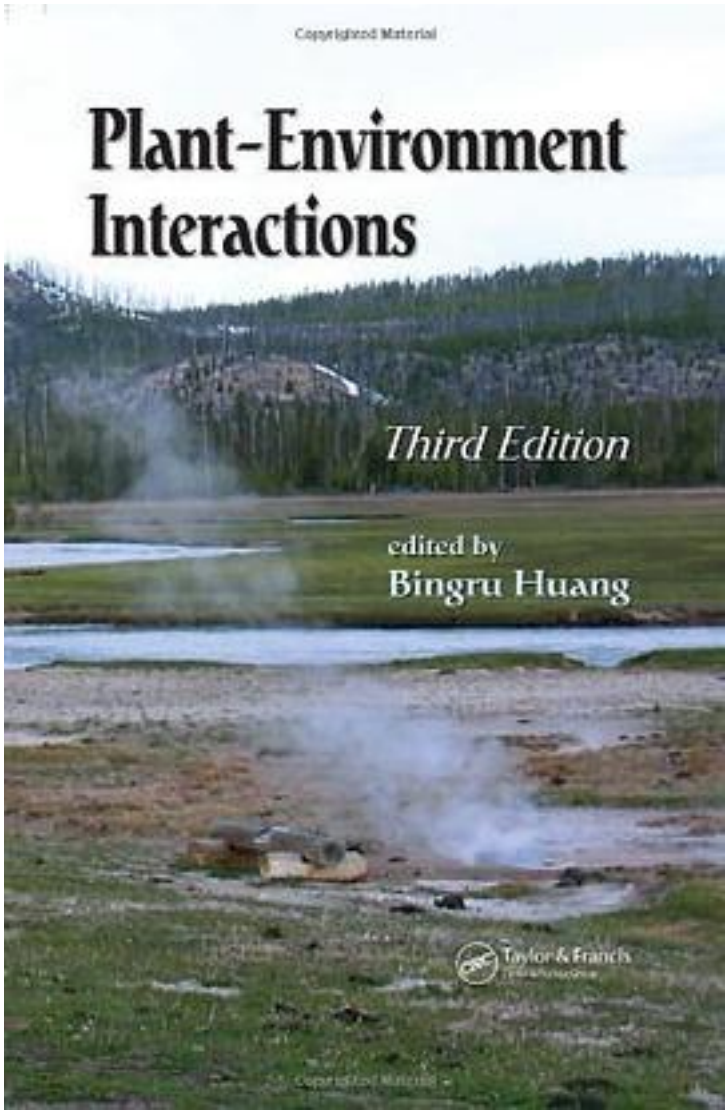
Plant -Environment Interactions



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While many texts, including the first two editions of "Plant-Environment Interactions", successfully focus on whole-plant responses to abiotic stress, the challenges of continued climate changes and increasingly taxed natural resources require us to become more resourceful in our efforts to improve agricultural yield. Fortunately, dramatic progress in molecular biology and biotechnology has recently produced a wealth of information on the mechanisms of plant and environmental interactions at the cellular and molecular levels. Completely revised and expanded, this book offers fresh insight from a new multi-disciplinary team of international researchers. Fully revised and expanded, "Plant-Environment Interactions, Third Edition" leverages recent research to provide unparalleled insight concerning the most important and common abiotic stresses limiting plant growth and productivity in both natural and managed environments.Pioneering experts from a variety of disciplines provide a completely fresh look at the topic in light of the discoveries they have helped to herald. Examining most, if not all, of the recent advances in cellular and molecular mechanisms of plant tolerance to abiotic stresses, they thoroughly cover - Recent literature on gene expression, changes in protein metabolism, and biotechnology in relation to plant and environmental interactions; and, newly developed methods and techniques in stress physiology and molecular biology, including physiological and biochemical methodologies commonly used for the evaluation of plant-stress tolerance.Applications of genomic and molecular approaches for improving the stress tolerance of plants utilizing mechanisms identified through the analysis of plant-environment interactions at whole-plant, cellular, and molecular levels. Going a step further, this volume re-examines older literature in light of recent advances, and while it provides many answers, it also raises many challenging questions deserving the attention of future research.An essential resource for plant physiologists, breeders, molecular biologists, agronomists, horticulturists, and crop scientists, as well as academic researchers and graduate students, this work provides an in-depth understanding of abiotic stress as it highlights the steps needed to improve whole-plant growth and productivity in suboptimal environments.

作者介绍:

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