Plant electrophysiology: signaling and responses

Abstrak

Provides a comprehensive and up-to-date overview of the current state of knowledge on electrical signaling and responses in plant physiology. It covers a significant interdisciplinary area for a broad range of researchers, emphasizing the physical, chemical, biological, and technological aspects of plant electrophysiology, while also demonstrating the role of electrochemical processes and ion channels in plant life cycles. Separate chapters describe the electrophysiology of the venus flytrap, the telegraph plant, mimosa pudica, and other interesting plant species. Subsequent sections focus on mechanisms of plant movement, the role of ion channels, morphing structures, and the effects of electrical signal transduction on photosynthesis and respiration. Further topics include the electrophysiology of plant-insect interactions, how plants sense different environmental stresses and stimuli, and how phytoactuators respond to them. All chapters analyze the generation and transmission of electrical signals in plants.