Understanding abiotic stress responses in plants is critical for the development of new varieties of crops, which are better adapted to harsh climate conditions. The new book by the well-known editor team Narendra Tuteja and Sarvajeet Gill provides a comprehensive overview on the molecular basis of plant responses to external stress like drought or heavy metals, to aid in the engineering of stress resistant crops.

After a general introduction into the topic, the following sections deal with specific signaling pathways mediating plant stress response. The last part covers translational plant physiology, describing several examples of the development of more stress-resistant crop varieties.

An elected fellow of numerous academies, Narendra Tuteja is currently a senior scientist at ICGEB, New Delhi, India. He has made significant contributions to crop improvement under adverse conditions, reporting the first helicase from plant and human cells and demonstrating new roles of Ku autoantigen, nucleolin and eIF4A as DNA helicas. Furthermore, he discovered novel functions of helicas, G-proteins, CBL-CIPK and LecRLK in plant stress tolerance, and PLC and MAP-kinase as effectors for G proteins. Narendra Tuteja also reported several high salinity stress tolerant genes from plants and fungi and developed salt/drought tolerant plants.
Currently assistant professor at MD University, Rohtak, India, Sarvajeet Singh Gill has made significant contributions to abiotic stress tolerance. Together with Narendra Tuteja he worked on plant helicases and discovered a novel function of plant MCM6 in salinity stress tolerance that will help improve crop production at sub-optimal conditions. A recipient of the Junior Scientist of the Year Award 2008 from the National Environmental Science Academy, Sarvajeet Gill has edited several books and has a number of research papers, review articles, and book chapters to his name.

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