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Special Issue on

Abiotic Stress Responses in Plants: Emerging Biotechniques from Laboratory to the Field

CALL FOR PAPERS

Productivity in plant agriculture largely depends on the growth margins that translate to higher and bumper yields. Plants are particularly sensitive to extreme temperature fluctuations (heat, frost, and cold), water availability (flooding to no water supply), and toxicities due to sodium (salt intrusion and high salinity) and minerals (metal and metalloid), which are referred to as abiotic stresses in general. These stresses occur and are foretold to occur more often in the future due to environmental factors resulting from rapid and dramatic changes in the global climate. More so, these stresses have repercussions on the burgeoning demand of an ever-increasing global population for secure and safe agriculture-based food supply.

As research in plant biotechnology makes advances, crops adapted to abiotic stressed environments are continually developed which can be sustainably and safely produced in environment-friendly agroecosystems. Through modern and novel biotechnology tools, research studies in developing broad-spectrum stress-tolerant plants adaptable to agroecological stressed conditions continue to gain foothold despite environmental uncertainties. These biotechniques include, but are not limited to, omics-based systems; genetic engineering and genome mapping; gene mining, cloning, and transfer and marker-assisted breeding; transgenes pyramiding; and studies on physiological, molecular, and biochemical plant responses, including crosstalk among various molecular mechanisms while under abiotic stresses.

This research topic for a special issue serves as a compendium of studies about plants' complex mechanisms involved in response to a single abiotic stress or combination of abiotic stresses using omics-based techniques and physiological, biochemical, and molecular methods and other multisystem approaches. This issue also includes studies highlighting comparative results of laboratory, greenhouse, and field experiments as well as long-term studies on responses of field-established plants under multiple abiotic stress conditions. Original research and reviews articles related to, but not exclusively limited to, the following topics are welcome for submission.

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/scientifica/botany/asrp/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline
Friday, 2 March 2018

Publication Date
July 2018