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Transgenic approaches to enhance salt and drought tolerance in Plants

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ABSTRACT

Abiotic stresses including drought, salinity, extreme temperatures, and heavy metal stress, are responsible for reduction in crop yields around the globe. The situation may further worsen with the reduction in arable land in countries of Asia due to population explosion. Though the conventional breeding programs developed stress tolerant varieties, the pace was very slow due to complication in abiotic stress by complex multigene traits and cumbersome phenotyping procedures. With the dawn of plant biotechnology, enormous efforts have been made to engineer stress tolerance in major-crops and model-plants. A substantial number of stress-responsive and/or stress-regulated genes have been identified. Addressing these constraints would help us in better understanding how transgenic plants are tolerating drought and salinity. Overview of the present and future methodologies would enable us to gain more insights in understanding transgenic approaches for tolerance to abiotic stress.

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