

## Identification of Drought Tolerant Genotypes by Evaluating Morpho-physiological Traits in Pepper

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The fast-changing climatic conditions make plants to be vulnerable to many abiotic stresses. Drought stress is one of the limiting factors that affect pepper production in water deficient regions. It affects plant growth and development by altering physiological, morphological, and metabolic processes. Breeding drought tolerant varieties is one of the mitigation strategies to overcome the ever increasing drought disaster. Hence, screening of new drought tolerant pepper genotypes is essential. The current study was aimed to identify new drought tolerant genotypes among the collection of pepper genetic resources. In total, 70 pepper genotypes were screened for drought tolerance after exposure to drought stress condition. The pepper genotypes were classified as highly tolerant, intermediate, or severely sensitive to drought stress based on the phenotypic analysis. Consequently, 13 genotypes significantly exhibited higher recovery rate after drought stress and were classified as highly tolerant. Comparative analysis of morphological and physiological parameters and expression of drought responsive genes between tolerant and susceptible pepper genotypes will be presented and discussed. The identified tolerant genotypes will be useful resources for breeding drought tolerant pepper cultivars.

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