RESEARCH ARTICLE

EFFECT OF PEG INDUCED WATER DEFICIT STRESS ON PHYSIO-BIOCHEMICAL CHARACTERISTICS OF DIFFERENT PEARL MILLET VARIETIES

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Abstract: The present study aimed to scrutinize six pearl millet varieties, differing in their drought sensitivity to evaluate drought tolerance through physio-biochemical parameters. The main purpose of this work was to screen the highly tolerant and susceptible genotypes under PEG-6000 induced water deficit stress (WDS). WDS was induced in seedling on 10th and 20 day of germination by exposing them to different stress levels *i.e.* T1 (Control); T2 (5% PEG) and T3 (10% PEG). Significant reductions in parameters viz. shoot length, root length, seedling vigour index I, seedling vigour index II and Membrane stability index was observed. The antioxidant enzyme activity (Catalase and Superoxide Dismutase) was assayed for these varieties under water stress. There was a profound decrease in the Catalase activity whereas the SOD activity was increased in the varieties selected for the study.The water stress induced by supplementing 5% PEG in soil was tolerable by the plants as compared to 10% PEG. The results obtained were useful in screening drought tolerant Pearl Millet genotype.

Keywords: WDS, PEG, Drought, Pearl millet, Enzyme activity

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