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Seed Germination and Recovery Responses of Suaeda Heterophylla to Abiotic Stresses

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Abstract : Seed germination and recovery from salt stress of an annual halophyte Suaeda heterophylla (Kar. and Kir.) Bunge to different iso-osmotic concentrations (0, -0.46, -0.92, -1.38, -1.84, and -2.30 MPa) of NaCl and PEG-6000 at 15/25, 20/30 and 25/35°C in both 12-h temperature and light regimes and in complete darkness were studied. Maximum number of seeds germinated in distilled water and increase in concentrations of both NaCl and PEG-6000 decreased germination at all temperature regimes, light and dark conditions, with higher inhibition in NaCl than PEG-6000. Recovery of germination and viability of seeds were lower in NaCl than PEG-6000 both in the light and dark. Moderate alternate temperatures (20/30°C) and 12-h photoperiod were found to be the optimal for seed germination and recovery. Better seed germination of S. heterophylla when osmotic potential caused both by NaCl and PEG 6000 is lower, temperature regime of 20/30°C and light regime is for 12 h.

Keywords : seed germination, abiotic stresses, Suaeda heterophylla, molecular biology
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