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Germination Behavior of Tricholaena teneriffae L. a perennial Grass Species

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Abstract : Tricholaena teneriffae L. is a xerophytic perennial herb that belongs to the Poaceae family likely to be used for ecological restoration programs. It's a dominant and economically important species widely distributed in the Bou-Hedma National Park, Tunisia. Reintroduction and expansion of T. teneriffae depend solely on sexual reproduction. This makes the understanding of its germination requirements vital for conservation and management. To provide basic information for its conservation and reintroduction, we studied the influence of environmental factors on seed germination patterns. The germination responses of seeds were determined over a wide range of constant temperatures (15–35°C), polyethylene glycol solutions of different osmotic potentials (0 to −2 MPa) and salt solution (0 to 150 mM of NaCl). Results indicated that the optimum temperature germination was attained at 25°C which corresponds to temperatures prevailing during mid spring season in the Mediterranean area. Seeds germinated in Polyethylene Glycol solutions exhibited significantly lower germination than control especially when water potential fell below -0.6 MPa. Germination percentage and rate decreased with an increase NaCl concentration. Seeds germination was substantially delayed and reduced with an increase in NaCl to levels above 50 mM. T. teneriffae is moderately salt tolerant at germination stage.

Keywords : germination, temperature, Tricholaena teneriffae L., salt stress, water stress, rehabilitation
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