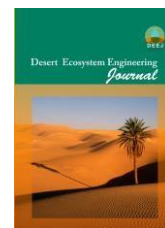




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Leaf water status, proline and soluble sugars in *Smirnovia iranica* (Sabeti) plants under habitat conditions

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Abstract

An experiment was carried out to investigate the effect of progressing water deficit stress on leaf water relation parameters and compatible solutes at different phenological stages. Completely randomized design including four phenological stages (as drought stress treatments) was used. Each treatment had four replicates. Variables measured were osmotic potential (Ψ S), relative water content (θ L), total osmotic adjustment (TOA), proline and total soluble sugar (TSS) content. Data collected were analyzed using analysis of variance (ANOVA) at significance level of $P < 0.5\%$, followed by the Duncan multiple range test. The results obtained show that improving drought stress during phenological stages Ψ S declined from -6.01 MPa (in FS) to -6.67 MPa (in SFS), respectively, for a decrease in θ L of 20.24%. Coupled with improving water deficit stress, a 55.5% increase was observed in TOA. For both proline and TSS content, among phenological stages (concomitant with water deficit stress), the lowest and highest levels were obtained in VS and SFS, respectively.

Keywords: symplast, apoplast, osmotic adjustment, osmolytes, water deficit.

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