

## Physiological Responses of Date Palm (*Phoenix dactylifera* cv. Zamardan) Seedling to Salt and Drought Stresses

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### Abstract

Evaluation of physiological responses to salt and drought stresses can result in better and more plant productions. In this research, some physiological responses of date palm seedling, Zamardan cultivar to these stresses were investigated. Relative water content, proline, soluble sugars and total protein of leaf were measured with three levels of intensity of salt and drought. The statistical design used was the completely randomized blocks with three replications. In salt stress, date palm seedling preserved its water content better than drought stress. Leaf proline increased 24% at maximum rate in salt stress and 14% in drought stress compared to the control. Soluble sugars increased 1.6 and 1.2 fold in salt and drought stresses, respectively compared to the control. Salt stress increased the total protein more than drought stress. Soluble sugars and total protein decreased obviously in severe droughts. In general, Zamardan cultivar of date palm is tolerant to moderate, middle and slightly severe levels of salt stress but in drought stress is only tolerant to moderate level and sensitive to middle and severe levels.

**Keywords:** *Stress, Salt, Drought, Date Seedling, Zamardan Cultivar*