

**SALINITY EFFECT ON ROOT AND SHOOT  
CHARACTERISTICS OF COMMON AND TEPARY  
BEANS EVALUATED UNDER HYDROPONIC  
SOLUTION AND SAND CULTURE**

*Haytham Z. Zaiter and Basma Mahfouz*

**American University of Beirut, Crop Production and  
Protection Department, 850 Third Avenue, New York,  
N.Y., 10022, U.S.A.**

The effects of increased salinity [NaCl + CaCl<sub>2</sub>] on seedling of three tepary and four common bean cultivars/lines, of known resistance and susceptibility at germination stage, grown for thirty-eight-days in salinized hydroponic and sand cultures were assessed at electrical conductivity (EC) 1.89 (control), 4.00, 8.00, and 12.00 dS m<sup>-1</sup> of half strength Hoagland's solution inside a glasshouse at 30/25 ± 2 C day/night temperature. The hydroponic culture screening method was more severe than the sand culture method. Common beans cultivars/lines expressed genetic variability to salinity stress at thirty-eight-days old seedlings. The common bean 'Badrieh' was tolerant to salinity as the tolerant tepary bean T#1 line under sand culture. However, this was not evident under hydroponic culture, T#1 showed salinity injury symptoms at EC = 4 dS m<sup>-1</sup>, while 'Badrieh' showed no salinity injury symptoms at the same EC level. These results indicate that the mechanisms involved in tolerating salinity in the tepary could be different from those involved in common beans. Inverse and significant correlations between salinity injury symptoms and several root and shoot characters were evident from the data, indicating that variation in whole-plant foliar injury symptoms to salinity would thus seem to provide the best means of initial selection of salinity tolerant genotypes by plant breeders.