Mitigation influence of salicylic acid on physiological attributes of tomato cv. Namib under salinity stress in soilless culture

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Abstract

Salinity stress is one of the most important abiotic stresses which impares growth and productivity of plants worldwide. Foliar application of chemicals such as salicylic acid (SA) is among potential solutions to ameliorate damaging effects of salinity. The present research was carried out during 2015-2016 growing season in Research Greenhouse of University of Kurdistan to study the influence of salinity and salicylic acid on physiological attributes of tomato plants. Treatments included two levels of salinity (0 (control) and 50 mM NaCl) and three levels of salicylic acid (0, 1 and 2 mM) as foliar application. Based on the obtained results, most of the studied physiological traits were affected by salinity stress. In this regard, foliar application of SA increased leaf relative water content, membrane stability index, total chlorophyll content, proline and soluble carbohydrates in comparison to stressed tomato plants which were not treated with SA. Overall, our results suggest that foliar application of salicylic acid of tomato plants could be considered as a strategy to stimulate resistance to salinity stress and maintain tomato growth in terms of physiological attributes.

Keywords: Physiological attributes, Free proline, Soluble carbohydrates.

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