Effect of salicylic acid on growth, yield and fruit quality of strawberry cv. 'Paros' under salinity conditions

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Abstract

Because of increasing trend in salinization of water sources, and inevitable using non-traditional water, a research was planned to determine the tolerance range of strawberry cv. Paros to salinity and possible role of salicylic acid (SA) in ameliorating its adverse effect on plant growth. In this research, effect of different salinity levels (0, 20 and 40 mM in nutrient solution) and SA (0, 100, 200 and 300 mg/L as foliar spray) on this plant was investigated. Rooted plants of strawberry were cultivated in 3 L plastic pots, filled with 1:1 ratio of perlite and cocopeat under greenhouse conditions. Day and night temperatures were 23±3 and 15±3 oC and relative humidity was about 60 to 70%. After establishment of plants, salinity treatments were carried out. Results indicated that salt stress had adverse influence on most of the parameters and caused reduction in shoot and root fresh and dry weight, and also decreased vitamin C concentration of fruits. Foliar application of SA solution at 200 mg/L caused an increase in tolerance level of plants and improved such characteristics as leaf area, shoot and root fresh and dry weight and yield. This ameliorative effect of SA decreased along with increase in salinity concentration to 40 mM. In general, SA could mitigate the detrimental effect of saline conditions on growth of strawberry plants, especially at 200 mg/L concentration.

Keywords: Salinity stress, Growth, Sodium chloride, Yield.

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