

The effect of salicylic acid and brassinosteroids on the performance of sweet pepper plant (*Capsicum annuum*) under different salinity levels

Munqez J.Y. Shtaya^a, Mahmoud Droubi^b, Heba Al-Fares^{a,*}, Hassan Abu-Qaoud^a

^aDepartment of Plant Production and Protection, Faculty of Agriculture and Veterinary Medicine, An-Najah National University, P.O. Box: 707, Nablus, Palestinian Authority, Tel. +972 597097069; email: heba-alfares@najah.edu (H. Al-Fares), Tel. +972 599800774; email: mshtaya@najah.edu (M.J.Y. Shtaya), Tel. +972 599721072; email: hassan@najah.edu (H. Abu-Qaoud)

^bFaculty of Graduate Studies, An-Najah National University, Nablus, Palestinian Authority, Tel. +972 9675893; email: dodo_m1993@hotmail.com (M. Droubi)

Received 6 April 2022; Accepted 18 August 2022

ABSTRACT

A study was carried out at the Faculty of Agriculture and Veterinary Medicine's experimental station to assess the effect of different concentrations of salicylic acid and brassinosteroid on pepper plants under different salinity levels in greenhouse conditions. Three salicylic acid (SA) and brassinosteroid (BR) concentrations (0, 0.05, and 0.5 mM) and three NaCl concentrations (0, 50, and 150 mM) were used. The experiment was set up as a split-plot with three replicates. Both BR and SA had a similar positive effect on fruit number per plant, total yield per plant, and SPAD, fresh and dry weight of the plant, as well as fresh and dry weight of the root. BR had no effect on plant height, whereas SA at 0.05 mM increased plant height significantly. BR had no effect on root/shoot ratio, whereas SA at 0.5 mM significantly increased root/shoot ratio. The study found that using brassinosteroid and salicylic acid reduced the effect of salinity on pepper plant yield and growth.

Keywords: Brassinosteroid; Salicylic acid; Salinity; SPAD; Sweet pepper

* Corresponding author.

Presented at the 1st Palestinian-Dutch Conference on Water, Sanitation and Hygiene (WASH), and Climate Smart Agriculture (CSA), 5–6 September 2022, Nablus, Palestinian Authority

1944-3994/1944-3986 © 2022 The Author(s). Published by Desalination Publications.

This is an Open Access article. Non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly attributed, cited, and is not altered, transformed, or built upon in any way, is permitted. The moral rights of the named author(s) have been asserted.