Fourth Article

Article title	Pyridoxine-hcl plus gypsum and humic acid reinforce salinity tolerance of coriander plants with boosting yield and modifying oil fractionations
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Abstract

Despite soil salinity is one of the prime abiotic stresses, exploiting the saline soils for the agricultural production will increase in the forthcoming decades to fulfill the human food requirements. Of course, the induction of crop tolerance to salt stress will share in plant growth enhancement and keeping productivity. The current study aimed to assess the influence of soil amendments (gypsum, GP and humic acid, HA) and vitamin B6 (pyridoxine-HCl), levels on growth, yield traits and bioactive compounds of coriander plants grown in salt-affected soil. GP and HA, whether individual or in combination, at a rate of 500 and 20 kg/ha, respectively, were applied under spraying of B6 at three levels of at 0.0, 150, 300 µM. The experiment was performed in a strip-plot arrangement under randomized complete blocks design using three replications. Findings illustrated the increases in umbels number/plant, umblets number/plant, seed counts/umbels, and seed yield/plant due to applying GP + HA × B6-leafy applied at 300 µM were 150.3, 117.9, 157.4, and 237.8%, respectively. GP + HA mixture with spraying 300 µM B6 possessed the lowest values of H2O2 and malondialdehyde (by 1.78 and 0.12 µmol/g FW, orderly), in relative to the control. As well, the highest significant percentages of TSS, SPC, FAA, and FProC were obtained from the combination of GP + HA mixture × 300 µM B6. Coriander plants received 300 µM B6 and amended with GP + HA mixture gave the greatest N, P and K+ and the lowest Na+ contents. Briefly, cultivating coriander plants in salty soils requires compatible agricultural practices via soil amendments plus exogenous application of vitamins. Herein, soil addition of gypsum + humic acid with foliar application of vitamin B6 could be a recommended practice in managing coriander production under saline soil conditions.