

Effect of foliar application of methyl jasmonate on flavonol-O-glycoside and some agronomic and morphological indices of chamomile (*Matricaria chamomilla* L.) under salinity stress conditions

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Abstract

Jasmonate is a plant regulator that plays an essential role in signaling pathway and triggering the expression of plant defense-genes in response to abiotic stresses. Hence, the effect of methyl jasmonate on quantity and quality of chamomile flowers under salinity stress was investigated with a factorial experiment, based on a randomized complete blocks design with three replications, in the research greenhouse of University of Zanjan. Five concentrations of Methyl jasmonate (0, 75, 150, 225 and 300 μM) was sprayed on chamomile plants which were growing under different concentrations of NaCl (2, 6, 10 and 14 dS/m). Results showed that the effects of methyl jasmonate and salinity were significant on all the traits. The highest values for plant height, total dry matter per pot, number and flower dry weight per pot and Flavonol-O-glycoside were obtained at 75 μM methyl jasmonate and salinity level of 6 dS/m. Flower yield and the amount of Flavonol-O-glycoside were decreased by increasing the salinity and methyl jasmonate concentrations over 6 dS/m and 75 μM , respectively. A significant positive correlation was revealed among all traits and dry weight of flower. Also, Flavonol-o-glycoside showed a positive and significant relationship with total dry matter per pot and flower dry weight. In general, concentration of 75 μM methyl jasmonate and salinity of 6 dS/m increased Flavonol-O-glycoside production of chamomile.

Keywords: Plant growth regulator, Gene expression, Flower yield, Flower quality.

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