

ABSTRACT

The current study was performed to find out the effect of exogenous application of gibberellic acid (GA₃) on growth, yield, chlorophyll content, some physiological parameters and proline content of mung bean (*Vigna radiata* L. cv. NM-2006) subjected to lithium (Li) stress. Four levels of lithium chloride (LiCl₂) were used i.e. Control, 50 ppm, 100 ppm, 150 ppm, 200 ppm and two concentrations of gibberellic acid (GA₃) 10⁻⁶ M and 10⁻⁴ M were used. With exogenous application of (10⁻⁶ M) gibberellic acid at 200 ppm measuring parameters increased as compared to control i.e. plant height (42.85%), number of leaves (22.22%), number of branches (50.23%), root length (25.00%), shoot length (50.09%), fresh weight of shoot (32.89%), fresh weight of root (44.34%), dry weight of shoot (52.84%), dry weight of root (52.84%), number of pods (50.00%), number of flowers (50.50%), number of seeds per pod (45.00%), number of seeds per plant (56.00%), weight of seed per pod (45.00%), weight of seed per plant (50.00%) and chlorophyll content (2.60%) increased while senescent leaves (43.98%) and proline content (56.33%) decreased with exogenous application of (10⁻⁶ M) gibberellic acid at 200 ppm. While number of senescent leaves (43.98%) and proline content (56.33%) decreased. With exogenous application of (10⁻⁴ M) gibberellic acid at 200 ppm measuring parameters increased as compared to control i.e. plant height (57.13%), number of leaves (44.44%), number of branches (78.89%), root length (50.00%), shoot length (83.33%), fresh weight of shoot (0.0%), fresh weight of root (90.03%), dry weight of shoot (83.45%), dry weight of root (83.45%), number of pods (75.00%), number of flowers (62.33%), number of seeds per pod (53.65%), number of seeds per plant (65.00%), weight of seed per pod (75.00%), weight of seed per plant (74.56%) and chlorophyll content (4.80%) increased while number of senescent leaves (56.33%) and proline content (83.33%) decreased with exogenous application of (10⁻⁴ M) gibberellic acid (GA₃) at 200 ppm. From this study it was concluded that, all the studied parameters were significantly affected by increasing Lithium stress and drastic effects of Lithium can be reduced by exogenous application of gibberellic acid (GA₃) and 10⁻⁴ M of gibberellic acid (GA₃) proved to be better than 10⁻⁶ M of gibberellic acid (GA₃).