



The Influence of Lithovit Fertilizer on the Chemical Constituents and Yield Characteristics of Cotton Plant under Drought Stress

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Abstract : Nano-fertilizers are used recently as an alternative to conventional fertilizers for slow release and efficient use by plants. This study was carried out to evaluate the effects of Lithovit (nano-CaCO₃) fertilizer on chemical constituents and yield characteristics of cotton plant under drought stress. The cotton plants pre-treated with four concentrations of nano-CaCO₃ (3000, 6000, 9000 and 11000 ppm) then exposed to drought stress. The obtained results showed that pretreatment of cotton plants under drought stress with nano-CaCO₃ caused increase of pigments content, total soluble sugars, total phenolics, total soluble proteins, total free amino acids, proline content, total reducing power, total antioxidant capacity and antioxidant enzyme activities and enhancement of yield characteristics. The optimum concentration of nano-CaCO₃ to alleviate the drought stress in cotton plant was 11000 ppm. Finally, it can be concluded that foliar application of nano-CaCO₃ can reduce the adverse effects of drought on cotton plants.

Key words: Drought stress – Cotton – Lithovit – Nanoparticles - Chemical constituents – Yield.

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