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Response of Mineral Status to Nano-Fertilizer and Moisture Stress during Different Growth Stages of Cotton Plants.

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Abstract: Pot experiment was conducted in the greenhouse of the National Research Centre during the 2014 summer season to investigate the effect of nano-fertilizer on mineral status of cotton plants grown under water stress. The treatments were as follows: a)-Water stress treatments: Missing of irrigation at budding (D1) and flowering stages (D2) more than regular irrigation (RI) as control. b)- Fertilizer treatments: 0.5 and 1.0 g l^{-1} nano-phosphorus (nano-P) and distilled water as a control.

Generally, nano-fertilizer affects the macronutrients and micronutrients status under different irrigation treatments. Application of nano-P led to improve the nutrients uptake under stress conditions as well as regular irrigation. The interaction effect of nano-fertilizer and drought through some growth stages of cotton plants indicated that application of nano-P at rate 0.5 g l^{-1} promote the nutrients uptake under D1, while 1.0 g l^{-1} depicted the best nano-P fertilizer rate enhanced the nutrients uptake under D2 condition.

keywords: Cotton (*Gossipyum barbadense L.*)-irrigation - nano-phosphorus - macronutrients – micronutrients – uptake.

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