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Amelioration of salinity negative effects on two hybrids of cantaloupe by nano potassium application

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Abstract : Two experiments were conducted during 2014 and 2015 growing seasons in Bahira governorate to investigate the amelioration effects of nano potassium application on two hybrids of cantaloupe plants (*Cucumis melo* L.) namely Baldo and Ideal grown under saline irrigation conditions (EC 5.47 dS/m). Through drip irrigation system, plants were supplied with different potassium compounds namely control (0.00); Agro argentum (8% nano form) (0.5 cm³/l); Leaf drip K (40% K₂O) (3.0 g/l) and Citra grow K (30% K₂O) (3.0 cm³/l). The applications took place in the 3rd, 6th, 9th, and 12th week after transplanting. Data showed that salinity affected the growth and production of both hybrids negatively with hybrid Baldo being more affected than hybrid Ideal. Meanwhile all potassium treatments significantly improved all plant growth and production parameters as well as fruit quality. The effects of potassium compounds were in an descending order as Agro argentum (0.5 cm³/l); Leaf drip K (3.0 g/l) and Citra grow K (3.0 cm³/l). The interaction between hybrids and potassium treatments showed the same trend of potassium treatments however with different degree of response according to the hybrid. Hybrid Ideal supplied with Agro argentum (0.5 cm³/l) recorded the highest significant values of all measured parameters. It could be concluded that Potassium application to cantaloupe plants can ameliorate the negative effects of salinity however, the nano form of potassium fertilizer is much more efficient in that effect compared to the conventional chemical form.

Keywords : cantaloupe, *Cucumis melo*, nano potassium, growth, total yield.