Third Article (Common with others inside the specialization - Published).

Increasing nitrogen efficiency by humic acid soil application to squash plants (Cucurbita pepo L.) grown in newly reclaimed saline soil

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SUMMARY

Two filed seasons were conducted during the summer seasons of 2010 and 2011 in the Experimental Farm at Demo, Faculty of Agriculture, Fayoum University, to increase nitrogen efficiency (ammonium nitrate 33.5% N; 150, 200, 250 and 300 kg fed^{-1}) under three concentrations of humic acid as water solution 0.5, 1.0 and 1.5gL^{-1}, in addition to the untreated as control to squash plants (*Cucurbita pepo* L.) (cv. Amjjed hybrid) grown in newly reclaimed saline soil..

In comparison with control, all other rates significantly increased vegetative growth plant characters (i.e. number of leaves plant^{-1}, stem length, total leaf area plant^{-1}, leaf area leaf^{-1} and also, leaves, stem and canopy dry weight plant^{-1}) as well as fruit yield and its components (i.e. number of fruits plant^{-1}, yield plant^{-1} and total yield of fruits fed^{-1}) except average of fruit weight. In addition, the concentrations of N, P and K % in leaves were increased, and Na and Cl were decreased. The same results were obtained with all nitrogen fertilizer rates; 200, 250 and 300 kg ammonium nitrate fed^{-1} as compared to the 150 kg fed^{-1} with some exceptions; P% was not affected and K% was decreased with increasing the rate of nitrogen.

In view of the above mentioned results, it has been concluded that the efficiency of nitrogen fertilization increased with soil application of humic acid reflected on the growth and chemical composition and yield of squash (cv. Amjjed hybrid), and was the best treatment: the water solution of humic acid (1.5gL^{-1}), with nitrogen fertilizer (250 kg) ammonium nitrate fed^{-1} where given a significant increase of total squash fruits yield fed^{-1} grown in newly reclaimed saline soil.