Effect of some macro and micro nutrients on growth and yield of egyptian cotton

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This investigation was carried out a the farm ofFac. of Agric. Zagazig Univ. at Moshtohor, Kalubia Gove orate to study the effect of some macro and micronutrients on cotton owth characters, yield and its components, chemical contents of seed cotton and fiber properties during 1993 and 1994 season. Giza 85 (Mu arak) cultivar was used as an experimental material. The experimental treatments consist d of 0, 45, 90 kg N/ feddan and 0, 16 kg P20s/ feddan and 0, 1000, 1500 ppm Fe andZn. Nitrogen fertilizer was applied in form f ammoniumnitrate (33.5 % N) after thinning process and before irrigati n. Phosphorus in the form of calcium s erphosphate (15.% P20S) was applied at sowing date. Micronutrients were applied twice as days from sowing in the form ofNervanide and Nervanid Zinc (14 % Zn, EDTA). was a split plot with 4 replications in both se liar spray after 45 and 90 errous (13 %Fe , EDTA)design of the experiment The important results obtained could be summarized as follows: 1- Effect of nitrogen fertilizer: 1- The highest plant height was obtained fr m the highest N level (90 kgN/fed.). 2- The highest number of leaves! plant' the second season wereobtained by using 45 and 90 kg N/ d. whereas the differences were not significant in the first season. 3- Nitrogen treatment had no significant ffect on leaf area of cotton plant in both growing season. 4- The highest number of vegetative bran hes resulted by using 45 or 90 kgN/fed. 5- The highest number offlowersl plant as obtained by using 45 kg NI fed. 6- Nitrogen levels did not affect numberthe first season. Application of significantly number of fruiting brf fruiting branches! plant in 5 kg N/ fed. increased ches! plant in the secondseason. 7- The highest number of bolls! plant was obtained by using 45 kg NIfed. and significantly higher than oth unfertilized and the treatment of 90 kg NI fed. 8- Different levels of nitrogen had signifi ant effect on boll weight in.both growing seasons. The highest bol weight (g) was obtained by using 45 kg NI fed. 9- The highest level of nitrogen signific tly increased the fruit set percentage. 10- The two levels of applied nitrogen sipercentage than the control treatmencantly decreased shedding in both growing seasons.The differences in shedding percentage etween 45 and 90 kg N/ fed. were not significant in both seasons. 11- The weight of 100- seed -g (seed dex) was not affected significantly by different levels of nitro en in the two successive seasons.12- Nitrogen fertilizer exerted a significante ct on lint percentage inboth growing seasons. Higher lint p rcentage of cotton was observed by applying 45 and 90 kg N/ f d. The difference in lint percentage between 45 and 90 kg N/ ed. was not significant in both seasons. 13- The effect of nitrogen fertilizer on see cotton yield! fed. was significant in both seasons. The highest s ed cotton yield! fed. was obtained with the application of 45 kg N/ fed. in both growingseasons. Application of nitrogen at a ra e of 45 kg! fed. increased seed cotton yield! fed. over the control b 18% and 57 % and over the higher rate of nitrogen (90 kg N/fe .) by 19% and 6 % in the first and second season, respectively. 14- The highest yield of. lint! fed. resul ed by using 45 kg N/ fed. The increases over the unfertilized trea ent were 22 % and 66 %and over the application of 90 kg N/ f .by 16%and 7 %in the first and second season, respectively. 15- Protein content in cotton seed was not ected by the addition of nitrogen in both growing seasons. 16- Nitrogen fertilizer at the rate of 90 kg N/ ed. significantlyincreased oil percentage in cotton seed as compare with control treatment in the first season only. 17- Fiber properties i.e. fiber fineness and aturity, fiber strength and fiber length were not affected by the addition of both levels of nitrogen.