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SOME TRIALS FOR INCREASING COTTON YIELD BY APPLICATION OF SOME MICRONEUTRIENTS

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ABSTRACT

Two experiments were carried out at Sakha Agric. Res. Station during 2005 and 2006 seasons to study the effect of foliar spraying cotton plants (Giza 86) with zinc, manganese, iron at concentration of 2000 ppm and boron at concentration of 1000 ppm besdies two of soil nitrogen fertilizer rates i.e. (45 and 65 kg N/fed) on yield, yield components, seed oil and protein percentage and chlorophyll content. Cotton plants were sprayed three times, at the beginning of flowering stage and the following two sprays were done every 15 days. Complete Randomized blocks design with four replications was used. The results could be summarized as follows:

1. Increasing soil nitrogen fertilizer up to 65 kg N/fed and spraying cotton plants with zinc, manganese (2000 ppm), boron (1000 ppm) and iron (2000 ppm) increased significantly final plant height (cm), number of lowers, number of open bolls, boll weight, seed cotton yield per plant and feddan, seed index, seed oil and protein percentages in seed and total chlorophyll content in leaf while it decreased shedding and earliness percentage but lint percent did not affected by spraying micro-elements and nitrogen fertilizer levels.
2. Increasing soil nitrogen fertilizer levels from 45 up to 65 kg N/fed significantly decreased earliness while, spraying Zn, Mn, Fe and B at concentration of 2000 ppm and 1000 ppm, respectively promoted earliness to some extent.
3. Foliar spraying of micronutrients and soil of nitrogen fertilization were more effective than nitrogen fertilizer alone and possibly better than each microelements alone.

The objective of this research was to study the possibility of increasing yield of cotton by spraying cotton plants with Zn, Mn, Fe (2000 ppm) and B (1000 ppm) under two levels of soil nitrogen fertilization and their effect on growth, yield and yield components seed, oil and protein percentages and chlorophyll content.