STUDYING THE CONTRIBUTION OF SOME AGRONOMIC FACTORS TO COTTON YIELD VARIATION

Samir K. A. Ismail ; Mohamed D.H.Dewdar and Farok M. Ismail
Agronomy Dept., Fac. Agric., Fayoum Univ.

ABSTRACT

Two experiments were carried out at the Farm of the Faculty of Agriculture, El Fayoum University, in the summer seasons of 2005 and 2006 in a split-split plot design with three replicates, to investigate the contribution of three sowing dates (25th Feb., 18th March and 8th April), three rates of nitrogen fertilizer (50, 70 and 90 kg N/fed.) and three different populations of plant (46.666, 70.000 and 93.333 plants/fed.) to cotton yield variation. The obtained results indicated that the studied plant characters were significantly affected by the variable of sowing dates. Delaying sowing to 8th April significantly decreased number of fruiting branches/plant, number of open bolls/plant, boll weight, seed cotton yield per plant and per fed. This trend of the previous results was manifested in both seasons. Adding 90 kg N/fed. showed the highest values of number of open bolls/plant, boll weight, seed cotton yield per plant and per fed., while, lint percentage, seed index and lint index, were not significantly affected by nitrogen fertilizer rates. Plant density of 46.666 plants/fed. showed significant increment in number of fruiting branches/plant, number of open bolls/plant, boll weight, seed cotton yield per plant and lint percentage traits, while, plant density of 93.333 plants/fed. resulted in the highest values of plant height and seed cotton yield/fed. On the other hand, seed index and lint index were not significantly affected by plant density. Yield analysis for the highest seed cotton yield obtained from the combined treatment of D×N×P indicted that number of fruiting branches, boll weight and number of open bolls were the major sources accounting for the variation in seed cotton yield.

Key words: