ABSTRACT

In order to determine the influence of chemical and bio-fertilizers on growth and chemical constituents of datura (*Datura innoxia* Mill.) plants, an experiment was conducted in 2010 – 2011 at Research Farm, Faculty of Agriculture, Fayoum University, Demo Province, Fayoum Governorate, Egypt. A factorial layout within randomized complete block design with 3 replications was used. Chemical nitrogen fertilizer levels included 0, 3, 6 and 9 g N/plant, the nitrogen fertilizer (provided) from ammonium nitrate source (33% pure N) and “Nitrobien” (bio-fertilizer); containing one strain of *Azotobacter chroococcum*, levels included 0, 5, 10 and 15 cm$^3$/plant.

The obtained results showed that plant height, main stem diameter, number of branches and leaves per plant, fresh and dry weights of different parts *i.e.* roots, stems and leaves were increased by application different rates of mineral and bio-fertilizers or their combinations.

All treatments alone or in combinations caused an increase in yield parameters *i.e.* fruits number per plant, number and weight of seeds per fruit and weight of 100-seeds, as compared with the control.