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EFFECT OF EXCESSIVE NITROGEN FERTILIZATION ON YIELD AND JUICE QUALITY OF SOME SUGARCANE VARIETIES

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ABSTRACT

To evaluate the response of sugarcane varieties to excessive nitrogen fertilizer levels, was estimated in field trial conducting at Kom Ombo Agricultural Research Station, (latitude of 24° 28' N and longitude of 32° 57' E), Aswan Governorate, in the two seasons of 2015/2016 (plant cane) and 2016/2017 (first ratoon). Each field trail included sixteen treatments, three promising sugarcane varieties i .e G. 2003-47, G.2006-6, G. 2010-7 and the commercial variety G.T. 54-9 as a control and four nitrogen fertilization levels i. e 210,240, 270 and 300 Kg /fad. Randomized complete block design with three replications arranged in split- plots system was used.

The results showed that all of the studied traits were significantly influenced by nitrogen fertilization levels. Increasing N-levels from 210 up to 300 kg /fad resulted increase Number of millable cane/m², millable cane length, diameter, weight, reducing sugars %, cane and sugar yield. While increasing nitrogen fertilization levels from 210 to 240 increased Brix, sucrose, Richness and sugar recovery percentages, followed by a gradual decrease with the increasing in nitrogen levels up to 300 kg N/fed.

Sugarcane varieties significantly differed in all studied traits. The promising sugar cane variety G.2003-47 as well as commercial variety G.T. 54-9 showed superiority over the other varieties in quality parameter. Sugar cane variety G.T. 54-9 surpassed the other varieties in millable cane height, weight, cane and sugar yield.

Key words : cane and sugar yield. Fertilization, nitrogen, sugarcane, varieties.