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YIELD AND QUALITY OF SUGARCANE VARIETIES AS AFFECTED BY POTASSIUM SILICATE AND INFESTATION WITH *CHILO AGAMEMNON*

Hanan Y. Mohamed[1]; A. El- Bakry[1]; A. M. Fahmy[2]; Eid. M. Mehareb[1]

[1]Sugar Crop Research Institute, Agricultural Research Center, Giza, Egypt.
[2]Plant Protection Department, Faculty of Agriculture and Natural Resources, Aswan Univerity, Egypt.

ABSTRACT

The present experiments were carried out in El-Mattana Research Station (latitude of 25.25°N and longitude of 32.31°E), Agricultural Research Center, Luxor Governorate, Egypt. The present work was conducted on plant can and 1st ratoon crops grown during 2015/2016 and 2016/2017 seasons to study the effect of foliar application of potassium silicate on natural infestation with lesser borer, *Chilo agamemnon* Bles of three sugarcane varieties. A split plot design with four replicates was used where the three potassium silicate levels i.e. control, 4cm^3/l and 8cm^3/l were applied in the main plots and the three sugarcane varieties namely G.T. 54-9 (Commercial variety), G.2003-47 and G. 2003-49 were allocated in the sub plots.

Results obtained pointed out that increasing potassium silicate from 0 to 4 and 8 cm^3/l increased stalk length, stalk diameter, quality parameters,i.e. sucrose%, purity% and pol%, as well as cane and sugar yields.

The studied varieties differed significantly in brix%, sucrose%, pol%, sugar recovery%, and reducing sugars%.

Sugar cane G.2003-47 variety was the most susceptible varietie to natural infestation with *Chilo Agamemnon* in terms of the incidence (bored stalks %) and intensity of infestation (bored joints %). On the contrary, G.2003-49 variety was the least susceptible with borers. Data revealed highly significant differences among potassium silicate levels. Increasing potassium silicate level up to 8 cm3/l was accompanied with a significant decrease in the percentage of infestation.

Key words : *Chilo agamemnon*. infestation, quality, potassium silicate , sugarcane variety, yield,