STUDIES ON SOME FACTORS AFFECTING GERMINATION AND TILLERING OF SUGARCANE

BY

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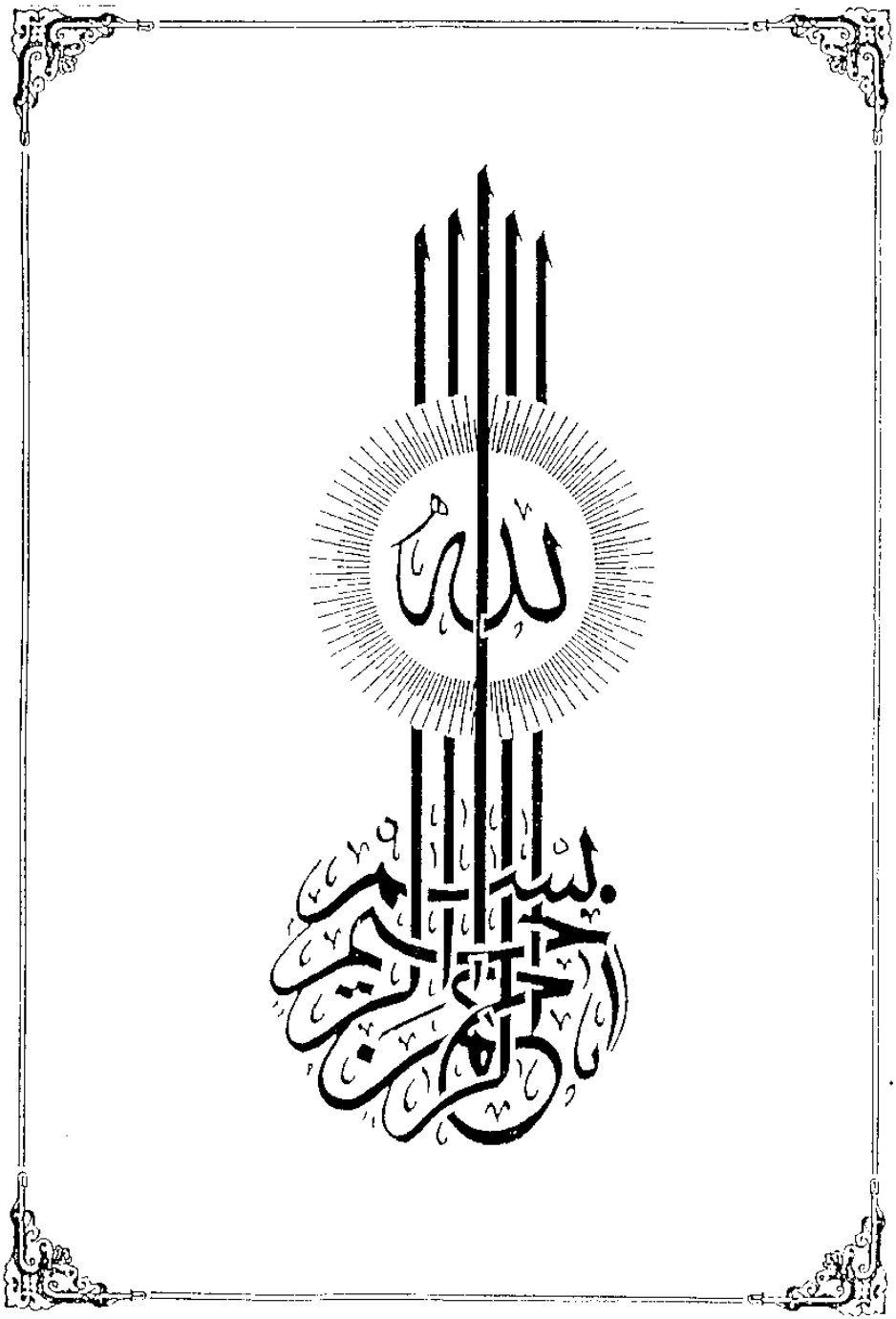

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ABSTRACT

Mohamed Abd El-Hamid Fergany . Studies on some factors affecting germination and tillering of sugarcane . Unpublished Master of Agriculture Science, Ain Shams University, Faculty of Agriculture, Agronomy Department, 1997 .

Two field experiments were conducted and repeated for two successive seasons of 1994/1995 and 1995/1996 in Shandweel Res. Station, Souhag Governorate .

The First experiment aimed to investigate the effect of three agronomical factors at three levels each ; row dislances (100, 120 and 140 cm), Cutting sizes (2,4 and 6 buds / Cuting), and three cane varielies(F. 152 , G.T. 54 - 9 and G. 85 - 37) on growth, yield, components and Juice quality .

The second experiment aimed to investigats the effect of 10 - soaking treatments on germination, tillering, growth and yield of the cane variety G.T. 54 - 9 .

Results of the first experiment showed the following :

- Row dislance affected significantly the number of cane stalks / mater, stalk deameter at the late ages of growth, stalk weight, fiber % , number of millable cane/fed. sugar recovery % and sugar yield . Meanwhile, other studied characters, i.e germination % , stalk hight, number of internodes and leaves / main stalk, chlorophyll content, TSS % , Brix % , Purity % and cane yield were not significantly affected .

- Cutting size affected significantly almost all studied characters with few exception such as ; chlorophyll content, TSS %, fiber % , Brix % , Purity % , Sugar recovery % , and number of millable cane / fed. Results revealed that planting by 4 budded

cane cuttings produced the highest values of germination % , number of stalk / meter , stalk dimentions, number of internodes / main stalk as well as cane and sugar yields .

The response of the 3 cane varieties under investigation to the studied characters varied greatly form one variety to the others, i.e. while the F 153 variety showed superiorty over the other two varieties in germination % , number of cane stalks / meter, fiber % and Brix % , variety G.T. 54 - 9 produced the highest sugar recovery % as well as cane and sugar yields .

The results of the second experiment revealed that some soaking treatments, i.e. soaking in water, soaking in 5 % or 10 % nutrient solution were superior in their effects on germination % at early stage of growth, number of cane stalks / meter, stalk weight , stalk diameter, number of green leaves / main stalk, TSS % , Brix % , Purity % , number of millable cane / fed., cane and sugar yields . Soaking cane cuttings in 10 % nutrient solution increased both cane yield and sugar yield by about 8.6 % and 1.0 ton / fed. compared with the traditional method (No Soaking) .

Key Words :

Sugarcane - Variety - Row distance - Cutting size - Soaking treatments - Nutrient solution - GA_3 -Germination - Tillering - Growth characters - Cane yield - Sugar yield - yield quality .

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