

Kumpanat Luecha 2012: Evaluation of Soil Texture Amount and Distribution of Rainfall Affecting Kamphaeng Saen Sugarcane Varieties Series 2000-2003. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Rewat Lersrutaiyotin, D.Agr. 94 pages.

Evaluation of environmental factors affecting 10 varieties of Kamphaeng Saen sugarcane varieties series 2000-2003 and 2 checked varieties from 4 varietal trial using RCBD with 3 replications under rainfed condition were conducted. Environmental factors studied were silt, clay and sand percentage, total amount of rainfall during periods and rainfall distribution per month. ANUDEM program was used to calculate amount of rainfall. Effect of environmental factors to cane yield and CCS were studied by simple regression and multiple regression.

The results revealed that response of sugarcane varieties to soil and rainfall factors were different, in which Kamphaeng Saen 00-156 did not response to soil and rainfall factors in cane yield, but Kamphaeng Saen 01-4-18 did not response to soil and rainfall factors in CCS. In the study of soil factors, sand percentage showed the linkage with the other factors, therefore simple regression evaluation was conducted only in sand percentage. Sand percentage showed the significantly negative effective to cane yield of 11 sugarcane varieties from 12 sugarcane varieties studied. Result of soil factors from multiple regression revealed that silt percentage had significantly positive effect to cane yield of most sugarcane varieties. Silt percentage also had positive effect to CCS but only in 7 from 12 varieties. Nevertheless, clay percentage showed non-significantly effect in every sugarcane variety. On the other hand, results of rainfall factors revealed that distribution of rainfall had significantly positive effect to cane yield only in Kamphaeng Saen 00-57 and Kamphaeng Saen 00-103. Amount of rainfall also had significantly positive effect to cane yield of only Kamphaeng Saen 01-11-5 and K 88-92. In CCS, factors of distribution and amount of rainfall had the significantly positive effect in most sugarcane varieties studied.

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