

Suriya Wongnoil 2012: Stability Evaluation in Yield and Yield Components of Kamphaeng Saen Sugarcane Varieties Using AMMI Analysis. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Rewat Lersrutaiyotin, D.Agr. 64 pages.

Study in stability of sugarcane varieties were conducted using 9 varietal trials. Each trial had 10 Kamphaeng Saen sugarcane varieties series 2000-2003 and 2 checked varieties using RCBD with 3 replications. Grouping of varietal trials by using amount and distribution of rainfall was conducted into 3 groups; group having high amount and good distribution of rainfall, group having high amount but poor distribution of rainfall and group having moderately low amount but good distribution of rainfall. AMMI was used for stability analysis in both studies. Results from analysis of variance using 9 varietal trials revealed that high effect of environment were observed in cane yield, CCS and sugar yield. In the analysis of variance using 3 groups of trials, almost the same results were observed in cane yield and sugar yield, in which very high environmental effect were observed in group of trial having high amount but poor distribution of rainfall and group having moderately low amount but good distribution of rainfall. While in CCS, high environmental effect were observed in group of trial having high amount but poor distribution of rainfall. Results from the stability analysis using 9 varietal trials revealed that Kamphaeng Saen 00-57 had the highest cane yield, CCS and sugar yield with moderate, low and low stability, respectively, LK 92-11 had high cane yield, CCS and sugar yield with moderate and high stability, respectively, Kamphaeng Saen 00-103 and Kamphaeng Saen 00-3-5 had moderately high cane yield, CSS and sugar yield with low. High and low stability, respectively. Results from the stability analysis using 3 groups of varietal trials having different amount and distribution of rainfall revealed that K 88-92, Kamphaeng Saen 00-103, Kamphaeng Saen 00-57 and Kamphaeng Saen 01-5-28 were the favorable varieties for cane yield in varietal trials having good distribution of rainfall and Kamphaeng Saen 00-156 and Kamphaeng Saen 00-3-6 were the favorable varieties for cane yield in varietal trials having poor good distribution of rainfall. K88-92, Kamphaeng Saen 00-57 and Kamphaeng Saen 00-24 were the favorable varieties for CCS in varietal trials having good distribution of rainfall and Kamphaeng Saen 01-5-28 and Kamphaeng Saen 00-3-6 were the favorable varieties for CCS invarietal trials having high amount of rainfall. In sugar yield Kamphaeng Saen 00-103 was the favorable variety in varietal trials having high amount and good distribution of rainfall, Kamphaeng Saen 00-3-6 and Kamphaeng Saen 00-3-5 were the favorable variety in varietal trials having high amount of rainfall but poor distribution. Moreover, K88-92 was the favorable variety in varietal trials having high amount of rainfall and LK92-11 was the favorable variety in varietal trials having high amount and good distribution of rainfall.

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Thesis Advisor's signature