

Jirapan Sukchit 2010: Stability Analysis in Yield and Yield Components of 2000 and 2001  
Kamphaeng Saen Sugarcane Cultivars. Master of Science (Agronomy), Major Field: Agronomy,  
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127 pages.

The promising and stability of Kamphaeng Saen sugarcane cultivars and the important yield components in each region of sugarcane planting areas in Thailand were evaluated by conducting 20 varietal trials in 4 regions, each region had 5 locations, namely northeastern, upper part of western, lower part of western and lower part of northern – eastern regions. Each trial had 20 cultivars composed of 5 checked cultivars and 15 tested Kamphaeng Saen cultivars. The RCBD were used having 4 replications of 4 rows plot. The results revealed that relations of stem diameter with other yield components, cane yield and sugar yield were different depend on the regions and type of crop (plant cane and first ratoon cane). The northeastern had the relations and effect of yield components to cane yield differed from other regions. Stem number per rai and weight per stem had the high direct effect to cane yield in almost regions except northeastern in both plant and ratoon cane, in which higher effect were found in plant cane than in ratoon cane. In study of environment and genetic effect in plant cane, almost the same level of 2 effects were observed in cane yield and stem number per rai in which higher effect of genetic were observed in stem length and stem diameter and higher effect of environment were observed in weight per stem and sugar yield. In ratoon cane, higher environment effect than genetic effect were observed in almost characters except stem diameter in which high different levels of effects were observed in stem number per rai and weight per stem. Low interaction effect between environment and genetic were found in both plant cane and ratoon cane. The high cane yield and high stability cultivars in plant cane were Kamphaeng Saen 01-1-12, Kamphaeng Saen 01-1-25 and Kamphaeng Saen 01-4-29. The high cane yield In ratoon cane were Kamphaeng Saen 01-4-29, LK 92-11 and Kamphaeng Saen 00-148, in which Kamphaeng Saen 01-4-29 had moderate high stability, LK 92-11 had high stability and Kamphaeng Saen 00-148 had low stability having the outstanding cane yield in northeastern. The high sugar yield in plant cane were Kamphaeng Saen 01-1-12 and Kamphaeng Saen 94-13, in which Kamphaeng Saen 01-1-12 had high stability and Kamphaeng Saen 94-13 had moderate stability. The high sugar yield in ratoon cane were KK 3, LK 92-11, Kamphaeng Saen 01-1-12 and Kamphaeng Saen 94-13, in which Kamphaeng Saen 01-1-12 had high stability, Kamphaeng Saen 94-13 had moderate stability and KK 3 and LK92-11 had low stability having outstanding sugar yield in lower part of northern – eastern regions.

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Thesis Advisor's signature