Supanus Sabangban 2012: Stability Estimation of Kamphaeng Saen Sugarcane Varieties by Eberhart and Russell, AMMI and GGE Methods. Master of Science (Plant Breeding), Major Field: Plant Breeding, Faculty of Agriculture at KamphaengSaen. Thesis Advisor: Associate Professor Rewat Lersrutaiyotin, D.Agr. 76 pages.

Results from 3 stability analyzing methods revealed the relationship between stability parameter of b from linear regression analyzing method and PC1 and PC2 from AMMI analyzing method in plant cane and CCS, in both using values or order of varieties and in both plant cane and first ratoon cane. Therefore, stability considering linear regression tended to give the same results as stability considering principle component of AMMI analysis. As relation between GE score from GGE analyzing method and average value of cane yield and CCS were observed in both using value or order of varieties and in both plant cane and first ratoon , calculating GE score played more important in average value than in stability parameter. In considering the favourable location for varieties, level of GE score from GGE analyzing method indicated the suitability of that variety in the location, while the PC1 and PC2 from AMMI analyzing method did not indicated the suitability of that varieties in location. Moreover, the same mark, + or - , of GE scores of varieties and GE scores of location from GGE analyzing method showed the suitability of varieties in location , while mark + or – of PC1 and PC2 from AMMI analyzing method did not indicated the suitability of varieties in the location. The favourable variety in the location in AMMI analyzing method may not be the suitable variety in that location, while the favourable variety in the location in GGE analyzing method would be the suitable variety in that location. GGE analyzing method could explain interaction between varieties and environment more than AMMI analyzing method.

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