

## **Genotype by environment assessment in sweetpotato as leafy vegetable using AMMI model**

### **ABSTRACT**

The genotype by environment ( $G \times E$ ) interactions can be observed by differential genotypic responses to varied environmental conditions. Its effect is to limit the accuracy of yield estimates and complicate the identification of specific genotypes for specific environments. The objective of this study was to use the Additive Main Effects and Multiplicative Interactions (AMMI) method, with additive effects for genotypes and environments and multiplicative terms for genotype by environment interaction for analyzing data of 6 sweetpotato genotypes at 8 agro-environments. Results indicated that genotypes MIB05 and MIB14 were suitable for vegetable use for their higher shoot yield despite the root yield was low but they had low stability among agro-environments especially for 2 environments in Pontian, Johor with peat soil but these genotypes are suitable for 2 seasons of Telong, Kelantan. More breeding efforts are needed in order to improve the yield stability of these genotypes. AMMI biplot analysis has shown its advantage as helpful tool in identifying the best genotype for improving leafy vegetable for a new cycle of crossing and selection. Moreover, results indicated that MIB20 (control variety) had high stability with low interaction effects in eight agro-environments.

**Keyword:** Genotype by environment ( $G \times E$ ); AMMI model; Sweetpotato; Genotypes; Agro-environments