

Genetic variability of sweet potato (*Ipomoea batatas* Lam.) genotypes selected for vegetable use

ABSTRACT

The presence of high variability among sweetpotato (*Ipomoea batatas* (L) Lam.) genotypes for morphological characters, especially shoot tips, used for vegetable is important to plan effective breeding programs. An experiment was carried using selected twenty-two genotypes from germplasm and farmers collections. The objective was to estimate the nature and magnitude of variability among morphology, yield and yield components and organoleptic traits in the sweetpotato. Observations were recorded on twenty-two characters. The analysis of variance revealed that there were highly significant ($p < 0.01$) differences among the genotypes for all the characters. Wide ranges of genotypic variability were observed among the genotypes for most of the characters. In morphological traits, 11.5 to 100% of the observable variability was due to the genetic variation while in yield and yield components this value ranged from 91.67 to 100% indicating the existence of immense inherent variability among the genotypes. Meanwhile, in organoleptic traits the value ranged from 19.63 to 29.5% of the observable variability and was due to higher phenotypic variability than genotypic contribution suggesting that the role played by the testing panels in expressing their scores on palatability vary greatly. High genotypic coefficients of variation along with high heritability were recorded for petiole length and leaf area in 10 cm tip in morphological characters, whereas, in yield and yield components the traits were total shoot and root yield and in organoleptic traits it was tenderness. Thus, future improvement of the genotypes could exploit the genetic variability available in these germplasm collections.

Keyword: Sweet potato genotypes; Components of variance; Heritability; Vegetable