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SEASONAL VARIABILITY, CORRELATION, GENETIC DETERMINATION AND CONTRIBUTION OF NINE AGRONOMIC TRAITS TO SEED YIELD IN SELECTED TROPICAL SOYBEAN (*Glycine max (L) Merr)* GENOTYPES

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ABSTRACT

Eighteen tropical soybean genotypes were sown in the teaching and research farm of the University of Agriculture, Abeokuta ($7^{0}29^{1}$N, $3^{0}30^{1}$E), Nigeria in year 2000 and 2001 to examine the degree of genetic determination and contribution of nine traits to seed yield taking cognizance of changes in weather conditions between cropping seasons. Analysis of variance revealed highly significant effects of genotype (G), year (Y) and GxY interaction for almost all traits. Increased number of pods per plant, reduced seed size, reduced chaff weight and significantly higher seed yield were observed in 2001. Observed estimates of genotypic variance, phonotypic variance as well as broad sense heritability (H_B) were also higher in 2001 relative to year 2000. However, pod number per plant, plant height, 300-seed weight and number of branches per plant with overall high estimates of H_B (64.1—89.9%) and genetic advance (GA) (35.2—55.5%) were identified as the most important yield-related traits with at least 92.0% contribution to seed yield over the two years. It was, therefore, concluded that the identified traits could be good predictors of seed yield and that direct selection for these traits in the early segregating generations could result in substantial genetic improvement for seed yield among tropical soybean genotypes.

Keywords: Correlation, Genetic advance, Heritability, Humid tropics, Stepwise regression, Soybeans.