Abstract

Documented information on naturalized pumpkin landraces in Kenya to identify useful variability is insufficient. The present study assessed variability using quantitative characters of 155 accessions, with 70 and 85 from Kakamega and Nyeri regions, respectively. The accessions were grown in one farm in a completely randomized design with three replications. Analysis of variance showed significant ($P<0.05$) variation in all characters. Lowest and highest variables in mean and range were leaf length/width ratio and seed number that were 0.8 and 0.4, and 837 and 4,111, respectively. Eight factors accounted for 79.4% of total variation. The highly variable factors were fruit flesh thickness, length, width and length/width ratio, size, total weight, average weight and number, as well as seed number, 100-seeds weight, length, width, and thickness. Phenotypic coefficients of variation (PCV) were slightly higher or equal to genotypic ones (GCV). High GCV and PCV, heritability and genetic gain resulted for fruit size, total fruit weight, fruits and seeds. Over 70 positive correlations in fruit size, number and seeds with total fruit weight were observed in genotypic and phenotypic variabilities. Maximum positive direct effects on total fruit weight were observed in seeds, fruit average weight, length, and size, while indirect effects were observed in fruit number, flesh thickness, length, peduncle length and days to first flower. Multivariate analysis revealed fruit size, number, total weight, and seeds were characters of great genetic variability, which should be considered as primary components for achieving high yields in pumpkins when screening accessions for selection and improvement.