Characterization of Grain Amaranth Genetic Resources for Agro-Morphological Traits

M. Umadevi, P.S. Devanand and K. Kumaran

Forest College and Research Institute, Mettupalayam-642 110, India
E-mail: umadevitnau@gmail.com

Abstract: A study to assess the variation among 125 grain amaranth accessions using six morphological characters was conducted. Based on *per se* performance, the promising genotypes of grain amaranth *viz.,* KBGA10, KBGA11, Durga, VLC 44, SKGPA 63, IC 32186, IC35642, SKGPA65, SKGPA 64, Durga, SKGPA 81, BGA 2, VLC 44 and KBGA 10 were found superior over the checks under comparison (suvarna and annapoorna) for yield and yield contributing traits. Multivariate analysis of phenotypic characters showed the first three principal components contributed 72.74% of observed variability amongst the 125 lines with the eigenvalue >1 and PC1 accounted for 35.84% of the total morphological variation for the traits. Seed volume weight had negative values for the three components (PC 3, 4 and 6) but contributes to the Vth component with highest positive value (0.724).The results will help researchers and breeders to understand, utilize, conserve, and manage the collection for more efficient contribution to amaranth research and cultivation.

Keywords: Amaranthus germplasm, Principal component analysis, Mean performance, Genetic resources, Morphological traits