GENETIC DISSIMILARITY AND SELECTION OF PUTATIVE MUTANTS OF “TERRA MARANHÃO” PLANTAIN CULTIVAR USING THE WARD-MLM STRATEGY

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The objective of this study was to evaluate the genetic variability and select putative mutants of Terra-type bananas (AAB genome, Terra subgroup) subjected to gamma radiation based on agronomic data and Inter Simple Sequence Repeat (ISSR) molecular marker profiles using the Ward-MLM strategy. A total of 233 irradiated plants and 41 controls were assessed. The agronomic and molecular data were subjected to the Ward-MLM statistical algorithm in the SAS program. Cluster analysis was performed by the average distance method, (UPGMA), based on the distance matrix of the Gower algorithm, and the cophenetic correlation coefficient calculated using the R software. The distance between the putative mutants ranged from 0.26 to 0.55, with an average distance of 0.426 and the cophenetic correlation coefficient of 0.79. Three putative mutants which were selected based on the best agronomic traits and low height will undergo further evaluation in the next stages of the banana breeding program at Embrapa. This is the first attempt in using combined data of Plantain for the purpose of selecting mutants and assessing genetic variability.