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 mutants of Plantain subjected to gamma radiation based on morphological, agronomic and molecular data profiles using the Ward-MLM strategy.
MATERIALS AND METHODS

- 315 buds
- 20 Gy

- 111 mutants, three cycles
- Morphological traits: 07
- Agronomical traits: 21
- ISSR markers
- Index selection: 10% shorter plants
- Ward-MLM and Gower algorithm
The possibility of combining multicategorical, quantitative and molecular data for identifying the number of clusters presents new perspectives in studies of dissimilarity.

Preliminary study: the correlation between the multicategorical/quantitative and molecular data was $r = 0.0218$, which is quite low and shows that the data may be analyzed in a combined manner, and that most of the variability observed may be attributed to genetic factors.
RESULTS AND DISCUSSION

- The distance between the mutants ranged from 0.321 to 0.524
- Variability among the mutants
- Mutant bank for genetic studies: pseudostem color; petiole rib color; color of the suckers; opening of the petiole; leaf position; and others

Figure 1. Dendrogram constructed with 21 putative mutants of Terra Maranhão plantain cultivar and two controls through combined data using the Gower algorithm and the Ward-MLM strategy.
RESULTS AND DISCUSSION

Days: planting to flowering

Plant height

Bunch weight
The three mutants selected at this time will be subjected to field evaluations in the next stages of the plantain plant breeding program at Embrapa for the purpose of soon introducing a new variety which is earlier, more productive and short in height
Results show that there is genetic variability in the mutants selected and that it may be used in genetic breeding programs with a view toward obtaining earlier and more productive plants of reduced height.
THANK YOU!

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