

Variability within the venezuelan annatto (*Bixa orellana* L.) genebank.

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Abstract

The annatto (*Bixa orellana* L.) is used for containing bixin (pigment used as coloring matter). It has a wide heterogeneity in its botanical forms. The collection consists of eight introductions from local and indigenous communities of Venezuela. The purpose of this work was to evaluate the variability of the annatto collection by using multivariate statistical methods. The collection is located in Maracay, Aragua state, Venezuela. Descriptors were made for evaluations of accessions. Ten quantitative and nineteen qualitative characters were evaluated in each accession. Quantitative data were analyzed using Principal Component Analysis, to determine the contribution of each variable in the construction of axis, using vectors from correlation matrix among the ten quantitative variables. Groups of accessions were determined by hierarchical classification. The graphical representation was made by hierarchical dendrogram. The Principal Component Analysis showed that the first three components explain 45,5%, 24,9% and 13,4% of the total variance, respectively. The hierarchical classification of ten quantitative variables showed 5 groups, for quantitative fruit characters 3 groups and 4 for qualitative traits. The studied accessions showed high variability among them, and populations within the collection were different among them. The degree of differentiation among accessions depends on their sources of origin.

Key words: annatto, germplasm collection, multivariate analysis, principal components analysis, variability.

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