

Comparison of coefficients used for DNA Analysis by PRAPD

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ABSTRACT

The alterations caused by eight different similarity coefficients were evaluated in the clustering and ordination of 27 common bean cultivars analyzed by RAPD markers. The Anderberg, simple matching, Rogers and Tanimoto, Russel and Rao, Ochiai, Jaccard, Sorensen-Dice, and Ochiai II's [4] coefficients were tested. Comparisons among the coefficients were made through correlation analysis of genetic distances obtained by the complement of these coefficients, dendrogram [2] evaluation. The employment of different similarity coefficients caused few alterations in cultivar classification, since correlations among genetic distances were larger than 0.86. Nevertheless, the different similarity coefficients altered the projection efficiency in a two-dimensional space and formed different numbers of groups by Tocher's optimization procedure[25]. Among these coefficients, Russel and Rao's was the most discordant and the Sorensen-Dice was considered the most adequate due to a higher projection [9] efficiency in a two-dimensional space. Even though few structural changes were suggested in the most different groups, these coefficients altered some relationships between cultivars with high genetic similarity. The total eighteen algorithms of coefficient are used in PRAPD. The output of final result can be clustered by UPGMA tool which classifies the species hierarchical.

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