



Concentration Area: Plant Breeding

Genotype selection of half-sib progenies of pinheira with higher adaptability and stability

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The custard apple (*Annona squamosa* L.) is a species that produces fruits with excellent nutritional and organoleptic quality. Adaptability and stability studies are essential for genotype selection. Therefore, the selection by the harmonic mean of the genotypic values (HMGV) implies the selection for stability. Adaptability refers to the relative performance of genotypic values (RPGV) and the simultaneous selection for stability and adaptability, in the context of the mixed models, can be performed by the harmonic mean of RPGV (HMRPGV). The objective of this work was to select half-sib progenies of custard apple based on the stability and adaptability. The parental genotypes were selected from the germplasm collection of the State University of Montes Claros-MG. To obtain the four progenies, fruits from natural pollination were selected and these were identified as UNI-1, UNI-2, UNI-3, UNI-4, and distributed in the experimental area in a randomized block design, with three replicates containing five plants each. It was evaluated the average length of the flowers (AL) mm, in three harvests. The analyzes were performed using the REML / BLUP procedure, in the program Selegen. It was observed for individual heritability between progenies and repeatability of values with high magnitude, 0,68 e 0,78, respectively. Stood out the progenies UNI-1 e UNI-2, and the genotypes that presented the highest genetic gains were, 5 and 10 respectively. The criteria MHVG, PRVG e MHPRVG presented concordant results, that is, the progenies were classified similarly for the estimates of stability and adaptability, separated or simultaneous, in order UNI-1, UNI-2, UNI-4, and UNI-3, safe predictions of genetic values can be made with a single selection standard covering all attributes. In this context, it can be inferred that FC can be used as desirable characteristics in simple methods of improving custard apple, with good prospects of obtaining genetic gains.

Keywords: Plant breeding; REML/BLUP; Genetic gain.