



PHENOTYPICAL CORRELATION BETWEEN GRAIN YIELD COMPONENTS IN COWPEA LINES

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Cowpea, *Vigna unguiculata* [L.] Walp is of great economic and social importance, because actively participates in the feeding of thousands of families in Brazil, mostly in economically poorer regions. Given its importance, cowpea needs efforts to breeding the crop, essentially in relation to its productivity. To predict changes in productivity caused by selection pressure on another character, for a long time, breeding programs applied correlation techniques. However, this is only a measure of association, which does not allow conclusions about cause and effect, and does not allow inferences about the type of association that governs a pair of characters. Whight (1921) developed a method that allows the correlation coefficients to be divided into direct and indirect effects (track analysis). In this context, the mains of this work was to study the direct and indirect effects of the production components on the grain yield of cowpea genotypes in the Northwest region of Rio de Janeiro. An experiment field was carried in the city of Bom Jesus - RJ. The experimental design was a randomized block with four replications with 21 treatments, 18 highly inbred lines and three elite cultivars used as controls. The characters were evaluated: Number of days to start flowering (NDIF); plant stand (STD); Cultivation value (VC); Bedding (ACAM); Pod weight (PV); Pod length (COMV); Number of grains per pod (NGV); Grain Index (IG) and Grain Productivity (PROD). STD was the characteristic that most affected PROD (0.75), which is expected, since the larger number of plants in the field results in greater grain production. The total correlation between ACAM and PROD (0.13) demonstrates the importance of track analysis, considering that the direct effect (-0.69) represents the expected result, since lodging plants increases self-shading which decreases the productivity and also reduce the quality of the grain. The direct effects of COMV (-0.38) and NGV (0.66), added to the indirect effect of PV (0.58) going through NGV, demonstrate that grain size is fundamental for determining productivity. Thus, it is possible to conclude that the Plant Breeders interested in breeding cowpea productivity should intensify selection pressure in genotypes with larger grains, compact pods and, with the largest number of grains, as long as these grains do not lose in unit weight. In addition, it is important to highlight the selection of genotypes with low accommodation rates.