

Area of concentration: Plant Breeding

**CORRELATION AND PATH ANALYSIS OF TRAITS CONTRIBUTING TO
FRUIT YIELD IN GRAPES ‘BRS TAINÁ’ GRAFTED ONTO DIFFERENT
ROOTSTOCKS**

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Grapes are the third most exported fresh fruit in Brazil, the semi-arid region of São Francisco Valley is recognized for its table grapes production. Qualitative and quantitative traits in grapes can be affected by using different rootstocks due to the scion/rootstock interaction, associated with the edaphic and climatic conditions. Through correlation and path analysis is possible to identify which traits make a large contribution to yield. Therefore, the objective was to study the association of ‘BRS Tainá’ fruit yield cultivated onto different rootstocks with 11 morpho-agronomic traits, during the first production cycle. The experiment was carried out under field conditions, from July to December 2021, in Petrolina, PE, Brazil. The scions were trained in a horizontal trellis system, 3.5 x 2.5 m spacing, with localized drip irrigation. The experimental design was in randomized blocks with eight treatments (rootstocks) and four replications. The rootstocks were Ramsey, Teleki 5C, 101-14 MgT, IAC 313, IAC 572, IAC 766, Paulsen 1103, e SO4. Phenotypic correlation and path analysis were estimated to the following variables: pruning weight; stem diameter; number of canes; bud fertility index; number of bunches; weight, length, and width of the bunch; weight, length, and diameter of the berry; and yield. Significant effects of the rootstock were observed for the variables bud fertility index, number of bunches, and berry diameter. Estimates of significant phenotypic correlations ranged from -0.51 (stem diameter and bud fertility index) to 0.84 (berry length and diameter). The path analysis showed that a large part of the variation in estimated mean yield (0.59) was explained by the effect of morpho-agronomic traits evaluated. Therefore, other traits need to be evaluated for increasing the coefficient of determination. The direct effect of berry diameter on yield in the path analysis was significant (0.80) deserving special attention from the breeder during rootstock selection.

KEYWORDS: Table grapes; Phenotyping correlation; Tropical viticulture.