

## VINE ROOTSTOCKS UNDER WATER DEFICIT: RESPONSES IN BIOMASS, BIOCHEMICAL VARIABLES AND GAS EXCHANGE

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Viticulture in semi-arid regions can be affected by water deficit, leading to yield losses, biotic and abiotic stress. One option to prevent these effects is the use of drought-tolerant rootstocks. The objective of this study was to select grapevine rootstocks tolerant to water deficit based on above- and belowground biomass, biochemical variables, and gas exchange to ensure sustainability of grape production in the São Francisco Valley, Northeastern Brazil. The experiment was carried out in Petrolina, State of Pernambuco, Brazil. The rootstock cultivars 'Paulsen 1103', 'SO4', 'IAC 313', 'IAC 572', 'IAC 766', 'Ramsey' and '101-14 MgT' were subjected to three irrigation levels (100, 50, and 20% of ETo) in split plots randomised blocks with four replications. The main plot were irrigation levels and subplot were rootstock cultivars. Biochemical, biomass, and gas exchange-related characteristics were used for rootstock selection for drought tolerance through multivariate analysis by principal component (PCA) and analysis of variance. Brazilian rootstocks 'IAC 313' and 'IAC 766' showed higher proline synthesis in the roots, 'IAC 766' presented the best result for foliar sucrose synthesis, while 'Paulsen 1103' stood out in foliar proline, carotenoid and total chlorophyll/carotenoid ratio. The rootstocks 'IAC 313', 'IAC 766' and 'Paulsen 1103' showed better performance for primary metabolites, canopy biomass, pigments and gas exchange, which are important adaptation strategies for water deficit. The results obtained bring important contributions to the choice and use of vine rootstocks in the in conditions of water deficit in semi-arid viticulture regions.