



Area of concentration: Plant Breeding

**VINE ROOT STOCKS TOLERANT TO WATER DEFICIT: INFLUENCE ON
PHOTOSYNTHESIS AND STOMATIC CONDUCTANCE**

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The vine is one of the most economically important fruit trees in the world. The development of canopy and rootstock cultivars more adapted and tolerant to biotic and abiotic stresses it is one of the main objectives of the genetic improvement of the vine. This study aimed to characterize the photosynthesis and stomatic conductance of vine rootstocks in water deficit conditions. The experiment was carried out during 128 days between August and December 2021 at the Experimental Field of Bebedouro, Petrolina, PE. Plant vases containing 25 liters of soil from a cultivated area with vine and corrected for fertility were used, with irrigation located by drip. The treatments consisted of seven rootstocks: 101-14 MGT, IAC 313, IAC 572, IAC 766, Paulsen 1103, Ramsey e SO4. Each rootstock was submitted to three irrigation depths as a function of the reference evapotranspiration (20, 50 and 80% of ETo), with daily laminas calculated based on climatic information from the Automatic Meteorological Station. The experimental design was randomized blocks with four replications, in subdivided plots, with the main plot being the irrigation depth and the subplot, the rootstocks. The variables evaluated were: photosynthesis (A) and stomatic conductance (gs), using IRGA with readings every 15 days. There were significant differences between the rootstocks, especially 'Ramsey', '101-14 MGT' and 'Paulsen1103', in all irrigation depths and dates evaluated. 'Paulsen 1103' rootstock presented the highest values of photosynthesis and stomatic conductance under water stress conditions, demonstrating greater tolerance to water deficit. Complementary studies associating other variables and long-term in field are important for validation of rootstocks tolerance to water stress.

KEYWORDS: Physiology; Viticulture; Water stress.