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**Soluble and Unsoluble Sugar Foliar Contents in Grapevines Syrah and Moscato Canelli Submitted to Different Rootstock and Irrigation Strategies During two Production Cycles at São Francisco Valley, Bra**

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One of the main difficulties of grapevine cropping is to maintain an ideal balance of sugar distribution within the plants, that is related to their vigor, which is influenced by environment and cultural practices. Among the practices that control the excessive grapevine vigor, less vigorous rootstocks and controlled deficit irrigation are the most applied. The carbohydrate metabolism in grapevine leaves is influenced by a wide range of internal and external factors, such as environmental and hormonal stimuli, as well as, phenological stages. The objective of this work was to evaluate the influence of two irrigation strategies and two rootstocks on the leaves sugar metabolism of wine grapevines (Moscato Canelli and Syrah) during two production growing seasons. The essays were conducted during the second semesters of 2005 and 2006, at Embrapa Tropical Semi-Arid, at Petrolina, State of Pernambuco, Brazil. The experimental design was randomized blocks in a 2x2 factorial squeme, with five replication. The factors were irrigation strategies (PRD, partial rootzone drying; RDI, regulated deficit irrigation) and rootstocks (IAC 572 and 1103P). In the PRD treatment, there were two irrigation tubes per row with two emitters per vine (one in each side of the trunk), while in RDI vines there was one tube per row with three emitters per vine. Consequently, to apply the same amount of water to both treatments, the irrigation time was different. Seasonal and diurnal variations were evaluated for leaf contet of total soluble sugars, reducing sugars and starch at the beginign and at the end of cluster maturation and at different hours of the day (6, 13 and 18 hours). For both cultivars during the two growing seasons, the sugar metabolism in leaves was more affected by rootstock than irrigation strategies.

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