

Bioactive compounds and antioxidant activity in table grape cultivars from germplasm bank of Embrapa tropical semi-arid

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The demand for natural and healthy food that offers benefits to consumer health greatly stimulates the market of products such as grape and its derivatives. Currently, these products are consumed not only for its sensory qualities, but also as sources of compounds with antioxidant activity. The aim of this study was to quantify the bioactive compounds content and the total antioxidant activity of 18 cultivars of table grapes from the Active Germplasm Bank of Embrapa Tropical Semi-Arid, located at the Experimental Field of Mandacaru, in Juazeiro, Bahia State, Brazil. The cultivars studied were: A dona, Benitaka, Brasil, Cardinal, Christmas Rose, Estevão Marinho, Frankenthal, Isabel, Isabel Precoce, Isaura, Liberty, Muscat Caillaba, Muscat Hamburg, Muscat Noir, Patrícia, Piratininga, Saturn and Vênus. Bunches were harvested when berries were ripe. After harvest, they were transferred to the Postharvest Physiology Laboratory, at Embrapa Tropical Semi-Arid. The variables analyzed were anthocyanins, yellow flavonoids, total extractable polyphenols content, as well as total antioxidant activity, using the ABTS and DPPH methods. Among the cultivars analyzed, Isabel Precoce showed the highest anthocyanins content (166.42 mg 100 g⁻¹) and total extractable polyphenols (165.24 mg 100 g⁻¹). The yellow flavonoids content varied from 21.68 mg 100 g⁻¹, in 'Muscat Caillaba', to 45.78 mg 100 g⁻¹, in 'Isabel Precoce'. However, Benitaka, Christmas Rose, Estevão Marinho, Isabel, Liberty, Patrícia and Piratininga cultivars are equivalent to 'Isabel Precoce' for that characteristic. When the total antioxidant activity was determined by the ABTS method, the cultivars Muscat Caillaba, Isabel Precoce and Christmas Rose showed the highest average values: 9.68, 9.27 and 8.57 μM Trolox. g⁻¹ pulp, respectively. On the other hand, we identified Christmas Rose, Frankenthal, Isabel Precoce, Muscat Caillaba, Muscat Hamburg, Muscat Noir, Patrícia, Piratininga, Saturn and Venus as cultivars that had the most relevant total antioxidant activity, through the DPPH method. The results suggested that the highlighted grape cultivars could be consumed in order to maintain good health and they could be inserted in breeding programs focused in obtaining cultivars with higher functional compounds content and total antioxidant activity.