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ANTHOCYANINS IDENTIFICATION AND QUANTIFICATION IN NEW ACAI ACCESS

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The Amazon has a wide biodiversity of fruits rich in nutrients, including antioxidants such as carotenoids and anthocyanins. The açaí (Euterpe oleracea) is a fruit of a native palm from Amazon (açaizeiro), and its socio-economic importance is related to the diversified use by the food industry as natural dyes. These fruits present functional properties due to the presence of anthocyanins, responsible for dark purple color of ripe fruit and the biological activity as a promoter of human health (1). Increasing in the consumption by this fruit stimulates the development of new accesses, through the genetic breeding to produce out of season fruits, to increase plant yield and the edible part of the fruit and increase bioactive compounds content. Thus, it becomes important to obtain knowledge about the nutritional characteristics of new accesses. The objective of this work was to identify and quantify the anthocyanins present in new genetically breeding açaí accesses. The lyophilized pulp was obtained from Embrapa Amazônia Oriental (Belém, Brazil): BRS-PA 1 (A); L9P1 (B); L22P13 (C); BRS-PA 2 (D). The anthocyanins were exhaustively extracted from lyophilized pulps using 1% HCl in methanol and concentrated in a rotary evaporator. The pigments were separated on a C18 Shim-pak CLC-ODS (5 µm, 250 x 4.6 mm) reversed-phase column, using as mobile phase a linear gradient elution of aqueous phosphoric acid (4 %) methanol at 85:15 (v/v) to 20:80 for 25 minutes. The isocratic proportion was then maintained for 15 minutes. The mobile phase flow rate was 0.2 mL/ min, and the column temperature was maintained at 25°C. In the lyophilized açaí pulp two different anthocyanins were identified and quantified, the cyanidin 3-glucoside and the majority pigment was cyanidin 3-rutinoside. Regarding to the quantitation (per 100g of dry pulp), the control sample (lyophilized pulp of comercial fruits) presented 174.68 ± 20.54mg of cyanidin 3-glucoside and 235.59±2.20 mg of cyanidin 3-rutinoside. The new accesses showed the followed content of cyanidin 3-glucoside (mg/100g); 57.85±2.35 (A); 157.26±29.72 (B); 141.24±4.81 (C); 132.82±14.00 (D); and for cyanidin 3-rutinoside (mg/100 g) showed: 63.52±1.92 (A); 406.40±1.12 (B); 412.94±22.98 (C); 262.54±21.75 (D). Concerning the total anthocyanins content, the sample A (121.37 mg/100g) and D (395.36 mg/100g) showed lower values compared to control sample (410.27 mg/100g). However the samples B (563.66 mg/100g) and C (554.18 mg/100g) showed the higher levels than the control, 37% and 35% respectively. Thus, these results indicate that through the genetic breeding is possible to obtained new accesses fruits with high bioactive compounds.

References:

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