Title Chemical characterization and compounds of nutritional value in mango cultivars from the active germplasm bank of Embrapa tropical semi-arid

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Abstract

This work aimed at characterizing fruits of mango cultivars according to chemical and nutritional quality attributes at two maturity stages. The fruits were harvested from the Active Germplasm Bank, located at Experimental Station of Embrpa Tropical Semi-Arid, luazeiro, Bahia State, Brazil. The following cultivars were studied: Alfa, Bourbon, Calmon, Dama de Ouro, Duncan, Espada Manteiga, Favo de Mel, Heidi, Ipuçaba, Joa, Keitt, Kent, Langra, Malindi, Mallika, Néldica, Palmer, Parwin, Pêssego, Recife, Roxa, Ruby, Smith and Torbet, harvested at physiological maturity and evaluated at this time and after the complete ripening under room temperature (24.9±2.4°C and 34±8% RH). Contents of soluble solids, total soluble sugar reducing sugars, starch, ascorbic acid and total pulp carotenoids were studied using a completely randomized experimental design, in a 24 x 2 (cultivar x maturity stage) factorial, with three replications. The evaluations showed a high genetic variability among cultivars. 'Roxa' and 'Mallika' presented the highest soluble solids content (23.7°Brix and 24.3°Brix, respectively) and the first one had the additional characteristic of high total pulp carotenoids content even during the physiological maturity, achieving 2.20 mg. 100 g^{-1} in ripe fruits. This value was statistically equivalent to the contents observed in ripe 'Néldica' and 'Parwin' (4.02 mg.l00 g^{-1}) and 'Heidi' (3.87 mg. 100 g^{-1}) fruits, showing a high biosynthetic activity from physiological maturity. In addition, 'Joa' mango fruit had total pulp carotenoids content equivalent to 'Roxa'. Despite considerable statistical differences among cultivars, the intense starch breakdown during ripening reduced the contents to equivalent values in all of them. The highest acid ascorbic contents were observed in 'Favo de Mel, 'Malindi' and 'Langra'. The last one presented high values (35.98 mg. 100 mL^{-1}) even during physiological maturity. The highest total soluble sugar contents were quantified in 'Favo de Mel, 'Langra' and 'Joa', while 'Roxa', 'Malindi', 'Heidi' and 'Duncan' had the highest reducing sugar contents. Then, the mentioned cultivars deserve special attention in future breeding programs for mangoes, aiming at getting cultivars with superior quality.