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CHLOROGENIC ACID CONCENTRATION IN BRAZILIAN CARROTS CULTIVARS

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Resumo (Texto Científico) - Máximo 300 palavras | Abstract (Scientific Text) - (Maximum 300 words):
The phenolic compounds in carrots have important function on the food technology due to enzymatic browning, and bitterness flavor formation. However, the phenolics can modulate immune system, promoting and improving people health, because of their antioxidant capacity. The chlorogenic acids and their derivates are the main phenolic acid present in carrots, which concentrations vary in carrot tissues, depending on plantation conditions and the cultivars. The higher is chlorogenic acids contents, the bitter is the carrots. In this context, the aim of this study was to determine the chlorogenic acids in a wide range of carrots cross-breeded in Brazil. The determinations were performed from the replicates of 5 varieties (Brasília, Juliana, Kuroda, Planalto and Calibrada) cultivated in 4 blocks in the Embrapa Hortaliças fields. Soluble phenolic acids were extracted with 70% ethanolic solution and quantified by HPLC (column C18, ODS2, 4.6 mm x 250 mm). The mobile phase (MP) used was: MP A was deionized water with acetic acid (2%, v/v) and MP B was acetonitrile:acetic acid:water (30:2:68) in a linear gradient from 90:10 to 50:50 in 50 min, then increasing MP B to 0:100 until the end of the run. The flow rate was 1.0 ml/min. Chlorogenic acids were the most dominant soluble phenolic acids. Highest contents of soluble phenolic acids were found in Juliana (17.00 mg/100 g), followed by Calibrada (15.50 mg/100 g), Planalto (13.40 mg/100 g), Brasília (9.80 mg/100 g) and Kuroda (7.50 mg/100 g). Variation in the phenolic acid contents of the Brazilian carrots was moderate comparing to the data (7.72 to 74.64 mg/100 g) found in literature. Brasília and Kuroda varieties are more appropriated to be used for processing than the others.