

The Influence of Some Technological Aspects on the Carotene Content in Carrots

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SUMMARY

Among the carotenoids present in food products, beta-carotene is the most effective for body (Olson *et al.*, 1999), carrots being one of the best sources of carotene, approximately 80% -90% (Jeszka, 1997; Booth and Dark, 2009). Carotene content in carrots varies from 60 to 120 mg/100 g, but some varieties may contain up to 300 mg/100 g (Velišek, 1999). Beta-carotene is a precursor to A vitamin (Nilsson, 2009). The use of some technological links and different cultivars may affect the quantity of carotene in carrot roots. It is recommended that the sowing date to be before the end of May, in order that the carotene content to reach high values in autumn (Booth and Dark, 2009). The paper analyzes the total carotene content of two varieties of carrots, Flakker and Nantes. Applied technology was different through the sowing time of early and late crop and through the use of organic and mineral fertilizers. The total carotenoids were extracted from 10 g carrots with a mixture of methanol/ethyl acetate/petroleum ether (1:1:1, v/v/v) for four hours. Identification of carotenoids was achieved by comparing the retention times of separated compounds with those of available standards and on the base of the characteristic UV-VIS absorption spectra recorded with series diode detector for the compounds for which no ready standards were available (cis isomers of α and β -carotene). The obtained values varied between 5.96-15.37 mg/100 g. The best results (15.37 g/100 g fresh matter) were registered at Flakker sowed in March and fertilized with organic fertilizers.

Keywords: Carrot, carotene, early culture, late culture, organic fertilizers, mineral fertilizers

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