

Title Effect of minimal processing on bioactive compounds and color attributes of fresh-cut tomatoes

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Abstract

The feasibility of minimal processing and modified atmosphere packaging (5%O₂+5%CO₂) to preserve color attributes and bioactive compounds of fresh-cut tomato from different cultivars (Rambo, Durinta, Bodar, Pitenza, Cencara and Bola) was evaluated through storage under refrigeration. The phenolic compounds and vitamin C content of the six cultivars varied between 187.4 and 335.9 mg/kg fw and from 69.6 and to 212.3 mg/kg fw, respectively. The highest content of lycopene was found in Bodar tomatoes (80.5 mg/kg fw) while the concentration in the other cultivars ranged between 20.0 and 43.1 mg/kg fw. Antioxidant capacity, measured on the basis of the DPPH stable radical, was higher than 9.8% of DPPH inhibition. Neither the content of health-related compounds (lycopene, vitamin C and phenolic compounds) nor the antioxidant capacity changed significantly between whole and just-processed fresh-cut tomatoes. Furthermore the initial colors of fresh-cut tomatoes as well as vitamin C were maintained for 3 weeks under cold storage. The antioxidant capacity was well correlated with vitamin C and phenolic content, whereas lycopene was directly related to color measurements (a^* , L^* and H^*). Minimal processing maintains the main antioxidant compounds and color parameters of slices tomatoes for 21 days at 4 °C, thus preserving their initial nutritional value.