Title Evolution of Mineral Contents in Tomato Fruits During the Ripening Process After Harvest

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Abstract

A comparative study was carried out to evaluate the mineral content of tomato during ripening after harvest. Calcium (Ca), magnesium (Mg), sodium (Na), phosphorus (P), potassium (K), selenium (Se), and zinc (Zn) contents were determined in three of the main tomato types (round, elongated, and cherry) consumed in Portugal. Ca, Mg, Se, and Zn were determined by atomic absorption spectrometry, Na and K by flame photometry, and P by visible spectrometry. No significant variation was found in the Zn, P, Na, and K concentrations during the tomato ripening after harvest. For Ca, Mg and, especially, Se, significant variations in their corresponding concentrations were observed. The content of Ca and Mg tended to decrease from the initial concentration. Conversely, a considerable increase in Se content was observed. A decrease in total tomato mineral content was determined for all studied types after an 11-day period of maturation after harvest. Therefore, a new and significant aspect to emphasize as an outcome of this study is that an 11-day post-harvest ripening period for tomato ingestion by the final consumer should be recommended in order to benefit from the highest mineral content. This acquaintance could be very important for tomato agricultural practices and for economic development of this type of cultivation, as well as for the consumer's health.

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