USE OF EDIBLE COATINGS IN 'RAVENA' ITALIAN TOMATOES (*Solanum lycopersicum*)

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Abstract: Fruit coating technology is an alternative for preserving and extending the shelf life of tomatoes. Fruit coating technology is an alternative for preserving and extending the shelf life of tomatoes. It is considered simple and inexpensive, being viable for use from small to large producers. It can be made from biological materials acting as antimicrobial agents, antioxidants and other functional substances, without affecting their sensory characteristics of tomatoes. The objective of this work was to evaluate the postharvest quality maintenance of tomatoes using edible coatings made with essential oil and nanoparticles. For this purpose, two formulations were elaborated: T1 based on Carboxymethylcellulose and Neem essential oil; T2 Sodium alginate and zinc oxide nanoparticle compared to control treatment (immersion in water). The fruits were harvested at the mature stage, selected for sanity and transported to Embrapa Agroindustry of Food, being analyzed at zero time (right after harvest), with 3, 6, 9 and 12 days of storage at room temperature. After the application of the coatings was evaluated the parameters of pH, total titratable acidity (TTA), total soluble solids (TSS) and Ratio to observe changes in fruit quality. The results indicated that at the end of 9 and 12 days there was no significant difference ($p > 0.05$) in the pH values. About TTA, T1 presented significantly lower values than the other treatments, indicating the possibility of greater maturation. T1 and T2 showed significantly higher SST values than Control. There is a decrease in TSS from day 6. There was a significant increase in the Ratio values for all treatments, and T1 showed significantly higher values than the others. According to the parameters analyzed and associated with the fruit development stage, the nanoparticle coating was presented as a postharvest alternative for the extension of the fruit shelf life when kept at room temperature.

Keywords: modified atmosphere, plant physiology, Solanum Lycopersicum