



EVALUATION OF PULP BROWNING IN MINIMALLY PROCESSED 'ROYAL GALA' APPLE TREATED WITH ERYTHORBIC ACID

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ABSTRACT

The production and marketing of minimally processed (MP) apple is limited by the rapid and intense browning of the pulp. The application of antioxidants is the main alternative to overcome this problem, but with limited results, mainly due to the lack of information about the most adequate concentration of antioxidant for a specific fruit under certain storage conditions, such as type of packaging, temperature, humidity and storage time. Therefore, the objective of this study was to evaluate the effect of different concentrations of sodium erythorbate on color, weight loss, total soluble solids (TSS), total acidity (TA), ratio (TSS / TA), total phenols, antioxidant activity, and enzymatic activity (peroxidase and polyphenoloxidase) in 'Royal Gala' apple MP during refrigerated storage. Each fruit was cut in four wedge shape pieces of similar size, and immediately immersed (1.0 min) in the antioxidant solutions: (a) distilled water - negative control; (b) L-cysteine chloride 0.6 % [m.v⁻¹] - positive control; (c) erythorbic acid 1.0 % [m.v⁻¹]; (d) erythorbic acid 2.0 % [m.v⁻¹] and (e) erythorbic acid 3.0 % [m.v⁻¹]. The activity of the enzymes peroxidase and polyphenoloxidase increased throughout the storage, however, in the apples where the antioxidants L-cysteine (0.6 %) and erythorbic acid (1%, 2% and 3%) were applied the enzymatic activity was lower than the control. The 3 % erythorbic acid, in addition to satisfactorily preserving the color, preserved the phenolic compounds.

Keywords:

Antioxidants;

Enzymatic browning;

Antioxidant activity;

Polyphenoloxidase.