

Title DSC as a tool to assess physiological evolution of apples preserved by edibles coatings
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Abstract

The present study describes the results obtained on the evolution of apples preserved by edible coatings (alginate and gelatine based) by using differential scanning calorimetry (DSC) as an analytical tool, and their comparison to the textural evolution was measured by conventional methods and carbohydrate analysis by HPLC. The evolution of thermal transitions obtained from lyophilized apple fractions obtained from peel, pulp and core was monitored. Differences observed in the thermograms caused by the application of coatings to the apples are also studied. DSC results when compared to those of textural analysis seem to produce earlier responses to the physiological changes in apples. When edible coatings were applied, DSC profiles were found to be quite different from those of uncoated samples: two transitions are found in uncoated apples and three or four in the coated ones. As it was expected, both coatings affected the apples physiological evolution, but in dissimilar way. The tested methodologies are effective to monitor those post harvest changes. However, DSC analysis may be useful as a quicker and efficient method, eventually detecting changes earlier than conventional methodologies.