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Quality evaluation of natural edible coats on minimally processed yellow melon

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Edible coatings associated to minimally processed fruits are conducted mainly to reduce water loss and respiration, to delay ripening and senescence phenomena and to decrease physiological and microbiological problems. The purpose of this work was to evaluate the influence of two natural edible coatings on microbiological quality and physico-chemical characteristics of minimally processed yellow melon (*Cucumis melo* L.). Selected fruits were sanitized, brushed and disinfested with 200 ppm HClO at 5°C during 15 minutes before cutting. Two treatments were evaluated: 1% carboxymethylcellulose (CMC) and 0.75% Chitosan. Distilled water was used as control treatment. Melon chunks were dipped into a 30 ppm HClO solution, drained, immersed in the coating solutions at 5°C during 2 minutes, drained and packaged in Polyethylenterephthalate (PET) boxes. The samples were then stored for nine days at 2°C and 10°C and analyzed at 3-day intervals. Determination of mass loss, colour, firmness, pH, total titrable acidity, total soluble solids content (TSS), respiration rate, as well as microbiological and sensorial analysis, were carried out to evaluate the coating efficiency in both temperatures. Regarding the chemical results, a significant difference for the CMC and Chitosan treatments was verified. Colour components were lightly increased by Chitosan and CMC treatments, which seem to preserve the fresh aspect of the product according to the sensorial panellists. The sensorial analysis pointed out the undesirable effect of Chitosan on the coated fruits' flavour. Chitosan treatment had the best microbiological results when compared to the CMC one. According to this study the best storage temperature was 2°C.

Keywords: melon, fresh cut, Chitosan, CMC

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Use of edible and biodegradable coatings in fresh cut pineapple.

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The use of edible coatings in vegetable products has been increasing because it offers several advantages as being biodegradable and extends the shelf-life of fruits and vegetables. The objective of this work was to evaluate the effect of two biodegradable edible coatings, sodium-alginate and Chitosan, on the quality and shelf life of minimally processed pineapple storage at 10°C. Five L of each coating solutions were prepared as following - **2% alginate solution**: 100 g of Algenic acid sodium salt in 5 L of distilled water, heated at 70°C under constant stirring - **0,75% Chitosan solution**: 150 g of monohydrated citric acid dispersed in 5 L of distilled water and addition 37.5g of Chitosan (Crab shells Chitosan, minimum 85% deacetylated, SIGMA), heated to 60°C to dissolve the Chitosan. The coating solutions were then stored at 5°C before the dipping. The Chitosan coating had an important benefic effect on the microbiological contamination and on the maintenance of the total phenolic content. The high concentration of citric acid in the coating solution contributed to the antimicrobial effect but changed the sensory taste of fresh pineapple. The alginate coating also decreased the contamination of yeasts and molds but its effect was lower than the Chitosan one. Visual aspect of its coating solution can be not well accepted by the consumers. The concentration of alginate must be decreased to avoid the formation of a too thick gel. The Chitosan treatment resulted in the best product at the end of experiment and the most slight decreasing of phenolic compounds during all the experiments.

Keywords: biodegradable, Chitosan, Alginate, Shelf life