

Cell wall composition of alginate coated and pulsed light treated fresh-cut cantaloupes (*Cucumis melo* L. Var. *Reticulatus* Cv. *Glamour*) during chilled storage

ABSTRACT

This study was to investigate the effects of optimised alginate coating combined with repetitive pulsed light (RPL) on cell wall composition of fresh-cut cantaloupes during chilled storage. Fresh-cut cantaloupes were coated with alginate (1.86%, w/v) followed by RPL treatment (0.9 J cm⁻² at every 48 h up to 26 days) during storage of 36 days. Cell wall composition of fresh-cut cantaloupes was determined at every 12 days while microscopic analysis was conducted on day 2 and day 36. Alginate was effective in maintaining high pectin fractions of fresh-cut cantaloupes while RPL showed greater contribution in maintaining hemicellulose fraction. However, the combination of alginate and RPL was the most effective treatment to maintain the overall cell wall fractions that contributed to the cell wall integrity of fresh-cut cantaloupes during storage. The alginate + RPL samples also had the greatest cell turgidity and shape with well-defined cell walls at the end of storage.

Keyword: Repetitive pulse light; Alginate; Fresh-cut cantaloupes; Cell wall; Pectin; Hemicellulose