

Title Mild heat and calcium treatment effects on fresh-cut cantaloupe melon during storage
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Abstract

The effect of mild heat fruit pre-treatment on some properties of fresh-cut cantaloupe melon during storage was determined. Whole fruit, previously held at 4 °C, was immersed in heated water (60 °C) with and without dissolved calcium lactate (1%). Fresh-cut processing was done immediately, either after treatment or after storage at 4 °C for 24 h. Headspace gas accumulation during storage indicated reduced respiration in heat-treated fruit. Reduced lipase activity occurred in heat treated fruit during storage at 10 °C, while the fruit that was cut 24 h after treatment had a reduced peroxidase activity, unlike fruit that was processed immediately after heating. Isoelectric focussing indicated production of heat shock proteins (PI = 5.1 and 6.5) as a result of heat-treatment. Textural measurements showed increased hardness, chewiness and cohesiveness, but springiness decreased in heat-treated fruit. Presence of calcium in the treatment solution did not affect respiration and textural changes caused by heat treatment. Lipase activity was, however, higher in fruit heated in calcium solutions. Results indicated the potential improvement of shelf life of cut cantaloupe melon by mild heat pre-treatment of the fruit, and that the addition of calcium to the treatment water did not further improve product quality.