

Title Influence of fruit maturation, modified atmosphere packaging and storage temperature on physico-chemical quality attributes of fresh-cut West Indian lime (*Citrus aurantifolia*)

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Abstract

West Indian lime fruit (*Citrus aurantifolia*) at the mature-green (M1) and ripe-yellow (M2) stages of maturity were sliced into quarter sections, seal-packaged in low density polyethylene bags (LDPE), stored at 4-5°C, 7-8°C and 28-30°C and evaluated daily up to seven (7) days for marketable quality, cut-edge browning, chilling injury, fermentative aroma, pH, total soluble solids (TSS), total titratable acidity (TTA), TSS:TTA and vitamin C content. Storage temperature and fruit maturity noticeably influenced post-cutting quality and shelf-life. The best overall treatment was attributed to ripe-yellow (M2) fruit quarter slices stored at 7-8°C. The superior marketable quality of these slices resulted from absence of chilling injury symptoms, cut-edge browning and fermentative aroma that was typical of those slices, at the same stage of maturity, held at 4-5°C from day four (4) onwards. At 28-30°C quarter sliced lime fruit at both stages of maturity became unmarketable in less than two (2) days. The post-cutting life and quality of mature-green (M1) quarter slices succumbed to chilling injury damage after one (1) day at 4-5°C and after five (5) days at 7-8°C. Ripe-yellow (M2) quarter slices, which were less sensitive to chilling injury than their mature-green (M1) counterparts, exhibited no chilling injury symptoms at 7-8°C and only slight symptoms at 4-5°C after seven (7) days of storage.