ABSTRACT

The post-harvest storage of pomerac (*Syzygium malaccense*) under refrigerated and controlled atmosphere conditions

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The shelf-life and postharvest quality of the pomerac (*Syzygium malaccense*) were measured through physical, chemical and sensory changes for ambient, refrigerated, waxed, packaged, and controlled atmosphere stored pomerac, as well as for fruits stored in light or dark conditions.

Pomerac stored under ambient conditions (28°C) and which were unacceptable after 8 days showed rapid losses in weight, firmness, total soluble solids, fading of the red skin colour, high levels of shrivelling, decay, off-odours and a resulting objectionable taste. A shelf-life of 20 days was achieved for pomerac stored at 5°C. Such fruits were acceptable in terms of colour, firmness and taste compared to other refrigerated temperatures (10 and 15°C), however shrivelling was very apparent and thus a limiting parameter.

Waxed fruits marginally reduced weight losses, total soluble solids and colour loss compared to untreated fruits held at 5°C. Packaging improved the quality of the fruits compared to untreated and waxed fruits as weight loss, firmness and shrivelling were all reduced after 25 days of storage at 5°C.

The results of the respiration studies showed that under all temperature treatments (5, 10, 15 and 25°C), the levels of CO_2 produced declined with storage time. No levels of ethylene were detected for pomerac stored at all four temperatures. Pomerac therefore exhibited a non-climacteric respiratory pattern.

Storing pomerac in a dark chamber reduced the rate of colour loss compared to storage under light.

Storing pomerac in controlled atmosphere (CA) of 1% oxygen and 11% or 14% carbon dioxide at 5°C reduced weight loss, sugar loss and maintained firmness during storage. Other characteristics of CA stored fruits included lower rates of colour loss and a good to satisfactory taste with fruits having a typical pomerac flavour. CA storage extended the shelf-life of the pomerac to 25 days while enhancing the fruits' quality beyond that achieved at 5°C under normal air storage.