

ABSTRACT

The Handling and Storage of Papayas (Carica papaya L.)  
under Controlled Conditions.

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Storage trials were conducted on the behaviour of two local varieties of papayas viz:- Known You No. 1 and Tainung No. 1. In Trial 1, 96 samples of Known You No. 1 fruits were stored over a 27 day period under four systems:- 1) Traditional (28°C, no pre-treatments); 2) Ambient (28°C); 3) Refrigerated (16°C) and 4) Controlled Atmosphere (16°C, 1.5 - 2.0% O<sub>2</sub>, 5% CO<sub>2</sub>). In Trial 2, 84 fruits of the variety Tainung No. 1 were stored for 29 days under the same conditions of refrigeration and controlled atmosphere as the first trial.

All fruits were picked at the first signs of yellowing in the apex and except for the Traditional system, were hot-water treated (48°C for 20 minutes) and dipped in Benlate (52°C for 2 minutes). In the first trial, fruits stored under ambient, refrigerated and controlled atmosphere conditions were packaged in perforated polyethylene bags (100 gauge). In the second trial, refrigerated fruits were separated into four treatments:- (1) Untreated; (2) Waxed; (3) Nutri-Save and (4) Stretch-film and under controlled atmosphere storage, fruits were separated into two treatments:- (1) Untreated and (2) Waxed.

Fruits in storage and on ripening were monitored with respect to changes in certain physical, chemical and organoleptic properties. In Trial 1, fruits stored under the Traditional system had a maximum shelf-life of 7 days compared to Ambient storage of 12 days. Fruits under refrigerated and controlled atmosphere conditions developed first signs of fungal growth after 17 days in storage and this decay was exacerbated on ripening. In the second trial, the shelf-life in storage was best for waxed and stretch-film fruits. However upon ripening, qualitative changes associated with fruit maturity were best exhibited with stretch-film fruits.

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In general, the inability of fruits to develop complete yellowing on ripening together with discolouration of the skin due to fungal growth were the primary factors affecting acceptability. However, the palatability of the fruits was acceptable in both trials inspite of the duration of storage. These trials indicate the potential for refrigerated and controlled atmosphere storage of papayas.