

Modified Atmosphere Packaging And Low Temperature Storage of Red-Fleshed Dragon Fruit (*Hylocereus polyrhizus* (Weber) Britton & Rose)

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Dragon fruit (*H. polyrhizus*) gained popularity in the Philippines because of its attractive red peel and green bracts, high nutritive value and reputation for profitability. However, it is a short-season crop and highly perishable due to moisture loss, shrivelling, decay and bract discoloration that detracts consumer appeal and limit its marketable life. This study was conducted to extend the storage and shelf life of dragon fruit through modified atmosphere packaging (MAP) in combination with storage at low temperature. Excellent quality fruit harvested at 25-30 d after flowering were sleeved in polystyrene fruit cup and individually packed in 50.8 µm thick polyethylene (PE) and polypropylene (PP) non-perforated plastic bags. Sample fruits were withdrawn every 2 wk from storage at 5°C and transferred to 20°C for shelf life evaluation. MAP-stored fruit remained in excellent condition for up to 6 weeks at 5°C without any shrivelling thus fruits were firm, and bracts remained green. The use of polystyrene fruit cups generally aided in maintaining the visual quality of the fruit by protecting the bracts from breaking during handling. Non-packed (non-MA packed) fruits on the other hand lasted for only 4 wk at 5°C with noticeable change in visual quality and the bracts already exhibiting yellowing and tip browning. Shelf life at 20°C after a 4 wk storage of MA- and non-MA packed fruits were 5 d and 2 d, respectively. Extension of storage to 6 wk shortened the shelf life of MA-packed fruit to 3 d while non-MA packed were already unmarketable. Total soluble solids, titratable acidity and total phenolic content were higher in PE-packed fruit at its limit of marketability at 20°C.

Keywords: dragon fruit, low temperature storage, modified atmosphere packaging