

Title Postharvest quality of Dragon fruit (*Hylocereus undatus*) following disinfesting hot air treatments
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Abstract

Dragon fruit (*Hylocereus undatus*) are a host of fruit fly (*Bactrocera* spp.), and thus export to many markets will require a disinfestation treatment. This work investigated the potential for disinfestation by heat treatment (HT) of cv. Binh Thuan in order to meet the biosecurity requirements of importing countries. Main-season fruit from Viet Nam were subjected to hot air treatments and stored for 2–4 weeks storage at 5 °C in sealed polypropylene bags, and fruit quality examined during subsequent shelf-life at 20 °C. HTs applied were fruit core temperatures (FCT) of 46.5 °C for durations of 20 and 40 min, and 48.5 °C for 50, 70 and 90 min. Assessments included turgor of the bracts and stem, the appearance of the body of the fruit and presence of rots, skin colour, flesh firmness, soluble solids concentration, fruit acidity, taste, and flesh translucence. ‘Binh Thuan’ Dragon fruit proved to be tolerant of hot air treatment and at the lower HT temperature (FCT 46.5 °C for 20 min) fruit quality was not significantly different from non-heated control fruit, either after treatment at harvest, or after storage for up to 4 weeks. However, metrics quantifying the appearance of both control- and HT-fruit generally deteriorated with storage time at 5 °C, although the internal appearance of the flesh, and taste, remained acceptable throughout. Shelf-life effects were restricted to comparison of the lower HT temperature (FCT 46.5 °C for 20 min) and non-heated control fruit. Shelf-life after any of the storage periods was terminated after only 4 d, as fruit available for study had not been sprayed with fungicides during the season, and developed anthracnose rots readily at 20 °C. No differences in shelf-life characteristics were established between HT fruit and control fruit. Our results provide strong evidence that ‘Binh Thuan’ Dragon fruit are a suitable candidate for fruit fly disinfestation by hot air HTs, and that fruit quality during or after storage does not suffer as a consequence.