Effects of hot water, submergence time and storage duration on quality of dragon fruit (Hylocereus polyrhizus)

Abstract

This study was conducted to determine the effects of hot water temperature, time of submergence and storage duration on dragon fruit (Hylocereus polyrhizus). Fresh harvested dragon fruits were treated with hot water temperatures at 35, 45 and 60 ?C and time of submergence for 15, 30 and 60 minutes for 0, 5, 10 and 15 days of storage. The result showed that the hot water temperature significantly affected ($p<0.05$) the percentage of weight loss, titratable acidity (TA) and firmness of dragon fruit. The highest percentage of weight loss (12.80 %) was the fruit treated with hot water at 60°C and submergence for 60 minutes whereas the lowest percentage of weight loss (5.05 %) was the fruit treated with hot water at 35 °C for 60 minutes. Dragon fruit treated with hot water at 35 °C has high percentage of TA, 2.44 %. Fruit which was submergence in hot water at 35 °C showed the highest fruit firmness. The result also showed that the interaction between the three factors significantly affected ($p<0.05$) the percentage of weight loss, TA and pH of the fruits. TA decreased and pH increased for the fruit treated with hot water at 35 °C and submergence for 60 minutes. The interaction between hot water temperature at 35 °C and time of submergence for 60 minutes effectively reduced the weight loss and acidity of the dragon fruit ($p<0.05$). The shelf life and quality of dragon fruits can be extended using proper submergence time of hot water treatment.