

Pollen load affects quality of red-fleshed dragon fruit (*Hylocereus polyrhizus*)

Abstract

Dragon fruits are graded and priced according to fruit weight. Large fruit is not necessarily demanded by consumers especially small families. Currently the demanded size for dragon fruit is about 300 g per fruit. However, current practice could easily produce fruit weight about 600 g. Number of seeds could affect fruit size. Seeds are formed from successful fusion of male (pollen) and female gametes (ovule) during double fertilization. Thus, a study to determine the effects of pollen load on fruit development and postharvest qualities of red-fleshed dragon fruit was carried out. Hand-cross pollination treatments were done at night by using the collected pollen grains of 0.001, 0.05, 0.10, 0.15 and 0.20 g. The usual pollen load applied by the grower was used as control. Fruits formed from all treatments exhibited sigmoid growth pattern. Results indicated that pollen load of 0.001 g produced the smallest fruit in term of fruit weight, length and diameter as compared to other treatments. There were no significant differences in carbon dioxide and ethylene production, peel and pulp colour and chemical characteristic using different pollen load except for 0.001 g. Fruits of 0.001 g pollen load had significantly higher carbon dioxide production and soluble solids concentration. In conclusion, fruit weight of red-fleshed dragon fruit could be manipulated by the amount of pollen grains applied during pollination.

Keywords

Colour; Day after pollination; Fruit weight; Growth pattern; Soluble solids concentration