

Title Postharvest Physiological Changes in Different Maturity of ‘*Mokara Madame Panne*’ Cut Orchid

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Abstract

Some postharvest physiological changes were studied among the four different maturity stages of ‘*Mokara Madame Panne*’ cut orchid to investigate their effects on vase-life, held in reverse osmotic water. Four maturity stages included: opening of 3-4 florets, 5-6 florets, 7-8 florets, and 9-10 florets as stage 1, stage 2, stage 3, and stage 4 respectively. Respiration rate on day-0 of experiment was highest in maturity stage 1; however, it decreased and was not different on day-7 and 12 among the stages. Similarly, the rate of ethylene production was also found higher in maturity stage 1 on day-0; and then, all stages showed the similar trends of low ethylene production. The amount of total sugar within florets of *Mokara* inflorescences was much more in the maturity stage 1 on day-0. After that, it decreased in all maturity stages; however it was still higher in stages 1 and 2 in most of the days of holding. In the same way, the amount of total sugar within flower-stems (peduncles) of maturity stage 1 was always higher during the whole period of study; whereas, the other stages had the same trends of decreasing sugar. In most of the days of vase life, there were similar decreasing tendency of water uptake, water loss and water balance with slight fluctuations among the various flower stages. As a result, vase-life (11-13 days) of all maturity stages of *Mokara* cut orchid was not observed significantly different, although stage 3 and stage 4 exhibited maximum flower-buds opening in most of the holding period. In conclusion, different maturity stages of *Mokara* inflorescences in our study had no effect on vase life; because even 3-4 florets (26%) opening stage that is maturity stage 1 was found successful in maintaining the various physiological changes and vase life same as the other stage