



EFFECT OF POSTHARVEST TREATMENTS ON POSTHARVEST BEHAVIOUR AND SHELF LIFE OF *Jasminum grandiflorum*

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Abstract

Jasminum grandiflorum has attained importance in commercial cultivation out of 200 species of genus Jasmine. It is a fragrant flower and cultivated commercially for fresh flowers used in aesthetic utilities and industries. Even though the flowers have potential in market, postharvest studies have not been carried out to maximize its shelf life at low cost in Sri Lanka. The present study was conducted to determine the best harvesting time and to maximize the shelf life of *J. grandiflorum* with the use of pre-treatments and storage temperatures without losing its floral quality. Flowering phenology was monitored with two selected climbers via tagging flower buds from initiation stage to fully bloomed stage. The distilled water and chemical solutions viz., citric acid (350 mg/l), boric acid (4%) and sucrose (4%) were used as pre-treatment solutions by quick dipping method. After pre-treatment the flower buds packed in polyethylene bags (200 gauges) and stored in four different temperatures ($29\pm 2^{\circ}\text{C}$, air-conditioned temperature 24°C , refrigerated temperature at 10°C and 18°C). The periodical observations were recorded every 24 hrs from bud stage to senescence. Physical weight loss and bud opening index were calculated using a formula. Colour, appearance and fragrance were assessed using a scale as indicators of flower quality. Flower buds between 10 - 12 days after initiation can be recommended as the best stage for harvesting. Among the different pre-treatments, boric acid (4%) had the significant effect in enhancing the keeping quality of harvested buds. It was found that treating the flower buds with boric acid (4%) followed by stored under refrigerated temperature at 10°C were recorded the lowest physical weight loss, bud opening index and better colour retention. Hence, this treatment could be recommended as the best postharvest treatment to enhance the shelf life of *J. grandiflorum*.

Keywords: Boric acid, *Jasminum grandiflorum*, Postharvest treatments, Shelf life, Storage temperature