

Strategies for Extending the Longevity of Cut Lotus (*Nelumbo nucifera*) Flowers

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Lotus (*Nelumbo nucifera*) is an aquatic plant and the flowers are used for religious purposes and floral decorations. Improper post-harvest handling practices, high rate of respiration and transpiration leads to short vase life of lotus flowers about 1-2 days. With a view to improve postharvest life of cut lotus flowers, a study was conducted to develop a package of practices to maintain flower quality. In the first experiment three maturity stages as indicated by flower bud diameter (1-2 cm, 2-3 cm and partially bloomed) were plucked at different day times (6 am, 7 am and 5 pm) and vase life in deionized water was evaluated. Based on the results, best matured flowers were plucked at suitable day time and were kept in three preservative vase solutions namely, 1. Citric acid (100 mg/L) + 2 % sugar + aluminium sulfate (200 mg/L), 2. Salicylic acid (100 mg/L) + 3 % sugar, 3. 6-BAP (15 mg/L) + 2 % sugar + citric acid (192 mg/L) and 4. Deionized water (control) in the second experiment. Flowers were kept either in ambient condition (30–35 °C) or at low temperature (22-25 °C). The experiment was carried out in two steps and experimental design was two-factor Factorial Complete Randomized Design (CRD) with five replicates. Flower quality (flower bud diameter, flower weight, total soluble solid), vase life and solution uptake were assessed. Flower bud diameter, flower weight and flower longevity were significantly ($P < 0.05$) different. Flowers with 2-3 cm diameter of flowerhead were harvested around 6 am and were one day longer than the control while maintaining flower quality. A vase solution of 6-BAP (15 mg/L) + 2 % sugar + citric acid (192 mg/L) combined with placing in low temperature extended the flower quality up to four days which was two days longer than the control.

Keywords: Flower quality, Lotus flowers, Preservative solutions, Vase life