

Effect of chemicals in increasing the vase life of tuberose cultivars

I.P. SUDAGAR, P. ARUNA AND R. SHANKARANARAYANAN

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Tuberose (*Polianthes tuberosa* Linn.) is an important commercial bulbous crop, widely cultivated for use in loose flower, cut flower and extraction of essential oils in different parts of India and abroad. Tuberose spikes are highly perishable in nature and need to be treated to improve their vase life and postharvest quality. Increasing vase life is the key issue in the post harvest management of cut flowers. Most of the chemicals exhibited positive effect in delaying senescence in cut roses by increasing the water uptake and improving the water balance, leading to increased fresh weight and vase life. Presence of higher moisture content tends ornamentals to highly perishable, more susceptible to mechanical and physical damage, infection by diseases and pests during and after harvest. After harvesting, cut flowers carry on all the life processes at the expense of stored reserve foods in the form of carbohydrates, proteins and fats for their longevity. Chemicals helps to prolong vase life, promote lower opening and improvement of colour and size of flowers through osmoregulation. The present experiment was therefore conducted to study the response of cut spikes of tuberose cvs. Shringar, Vaibhav, Suvasini and Prajwal and flowers of single cv. MEXICAN SINGLE in different chemicals.

The experiment was conducted in five tuberose cultivars *viz.*, Shringar, Vaibhav, Suvasini, Prajwal and Mexican single. The treatments comprised of different concentrations and combinations of Sucrose, 8HQC, AgNO₃, Boric acid and a control (tap water). This experiment has seven treatments, laid out in a CRD, with two replications. Two spikes was taken for each replication. The spikes were harvested between 8 a.m. to 9.00 a.m. Basal ends of cut spikes were re-cut to a uniform length of 40 cm from the

lowermost pair of florets. The spikes were transferred to the flasks containing 400ml vase solution and kept under laboratory condition (temp. 28± 1°C and R.H. 70±4%). In control treatment cut spikes were kept in tap water. In case of mexican single, the flowers were immersed in the petridishes containing chemicals and observations on different parameters were recorded.

In the present investigation, it has been demonstrated that chemicals effectively increased the vase life in all treatments than control. In case of Vaibhav, The maximum vase life of 9.1 days was recorded in the treatment T₆ (sucrose 2% + 8 HQC – 200 ppm + AgNO₃ 50ppm). The treatment T₀ (control) recorded lowest vase life of 6.2 days. Flower diameter was maximum in sucrose 2% + 8 HQC – 200 ppm + AgNO₃ 50ppm T₆ (5.50 cm) when compared to T₀ where it was lowest (4.90 cm).

A significant increase in water uptake also indicated better water retention by the treated cut flower.

Increase in vase life with 8-HQC + AgNO₃ is because of their bacterial properties (Mayak *et.al.*, 1994). AgNO₃ has also been reported as an inhibitor of ethylene biosynthesis (Beyer, 1976). Addition of sucrose might have provided the required amount of energy to the bloom to remain, it fresh for longer period of time.

In case of Shringar, A maximum vase life of 8.10 days was recorded in Sucrose 2% + Boric acid – 100 ppm and this was at par with Sucrose 2% + 8HQC – 200 ppm + AgNO₃ - 50 ppm T₆ and T₅ (8 days). Vase life was least in T₀ (5.0 days). Flower diameter was maximum in T₆ (4.90 cm) and least in T₀ (3.90 cm). In case of suvasini, a maximum vase life

See end of the article for authors' affiliations

Correspondence to :

P. ARUNA

Department of
Horticulture, Horticultural
College and Research
Institute, Periyakulam,
THENI (T.N.) INDIA

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