

Effect of chemicals in increasing the vase life of tuberose cultivars

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ABSTRACT

In the present investigation, it has been demonstrated that chemicals effectively increased the flower diameter and vase life in all the treatments than the control. The maximum vase life and flower diameter was recorded when the cut spikes were immersed in a solution containing sucrose 2% + 8 HQC – 200 ppm + AgNO₃ 50ppm in all the tuberose cvs, Vaibhav, Mexican single, Shringar, Suvasini and Prajwal whereas the control recorded the lowest vase life in all the cultivars.

Key words : Tuberose, Chemicals, Increased flower diameter, Versa life

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. The present experiment was, therefore, conducted to study the response of cut spikes of tuberose cvs. in different chemicals.

MATERIALS AND METHODS

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). The experiment had seven treatments, laid out in a CRD, with two replications. Two spikes were taken for each replication. The spikes were harvested between 8 a.m. to 9.00 a.m. at a stage when the lower most two basal florets were fully opened. Basal ends of cut spikes were re-cut to a uniform length of 55 cm from the lowermost pair of florets. The spikes were then 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 flower diameter and vase life were recorded.

RESULTS AND DISCUSSION

Increasing vase life is the key issue in the post

harvest management of cut flowers. Presence of higher moisture content tends ornamentals to be 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. Preservative chemicals replaced the depleted endogenous carbohydrates utilized during postharvest life of flowers. Most of the chemicals exhibited positive effect in delaying senescence in tuberose leading to increased flower diameter and vase life of all the five cvs Vaibhav, Mexican single, Shringar, Suvasini and Prajwal.

In case of tuberose cv. VAIBHAV, the maximum vase life of 9.1 days was recorded when the cut spikes were immersed in a solution containing sucrose 2% + 8 HQC – 200 ppm + AgNO₃ 50ppm, whereas the control recorded the lowest vase life of 6.2 days. Flower diameter was also maximum in solution containing sucrose 2% + 8 HQC – 200 ppm + AgNO₃ 50ppm (5.50 cm) compared to the control (4.90 cm). The cv. MEXICAN SINGLE also recorded a maximum vase life of 7.10 days in treatment T₆ (Sucrose 2% + 8HQC – 200 ppm + AgNO₃ - 50 ppm). Least vase life was recorded in T₀ (4.13 days). Maximum flower diameter of 4.26 cm was recorded in the chemical solution containing sucrose 2% + 8HQC – 200 ppm + AgNO₃ - 50 ppm T₆ and this was at par with T₅ (Sucrose – 1.5% + 8HQC – 100 ppm + Boric acid – 100 ppm) which recorded a flower diameter of 4.23 cm. The least flower diameter was also recorded in T₀ (3.03 cm).

The chemicals play a vital role in enhancing the vase life, the turgidity and other spike characteristics. Even