

Vase life studies in tuberose (*Polianthes tuberosa*) cv. SHRINGAR as affected by post harvest handling treatments

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ABSTRACT

During the present study conducted on 'Shringar' tuberose, the treatment of 4% sucrose + 300 ppm $Al_2(SO_4)_3$ tended to increase the maximum opened florets (26.00), percentage of opened florets (77.02%), solution uptake (51.00 ml) and longer vase life (10.00 days) while the change in fresh weight of spikes on 3rd day (13.69 g) and diameter of florets (4.40 cm) was registered to be the highest in spikes treated with 4% sucrose + 25 ppm $AgNO_3$. The longest vase life (10.67 days) was observed in vase solution of 4% sucrose + 300ppm citric acid. Spikes wrapped in news paper stored for 24 hours at 4°C had maximum opened florets (22.23), per cent opened florets (74.00%) and longest vase life (7.00 day) where as the spikes wrapped in polythene sheet and stored for 24 hours at 4°C temperature resulted in enhanced floral diameter (4.22 cm) and water uptake (40.33 ml) at senescence.

Key words : Tuberose, Post harvest handling, Cut flower

Tuberose (*Polianthes tuberosa* L.) an ornamental bulbous plant, is native of Mexico and belongs to family Amaryllidaceae. Ornamental plants have prime importance in maintaining ecological balance and checking pollution in surroundings. About 45% of world trade in floriculture products goes to cut flower. In India, it occupies a prime position in the floriculture industry. Waxy white flowering spikes of single as well as double flower tuberose impregnate the atmosphere with their sweet lingering fragrance and are in great demand for making floral arrangement and bouquets in major cities of India. It is widely grown as specimen for exhibition and cut flowers. The standardized product of post harvest handling of cut flowers such as harvesting at optimum stage, conditioning, pre-cooling, impregnation, pulsing, bud opening, standard vase solutions, storage and control of vase microbes are useful for lengthening quality and life of cut flowers. The vase life of cut flower is influenced by constant water supply, microbial growth, ethylene formation and energy source used to preserve the flower quality and extending post-harvest longevity of cut flowers. The ideal preservatives should contain energy source sucrose and chemical germicidal and germistatal effects. The vase life of cut flower is influenced by variety of factors like climate, crop variety, harvesting time and post-harvest handling etc. Packing plays an important role in extending freshness, value addition and reducing damage. For very delicate flowers, news paper or tissue paper can be used to wrap before putting them into conditioning bottle. The present study was undertaken with the objective to find out the effect of various

chemicals in extending the vase life of cut spikes and best packaging material duration transit for tuberose cultivar 'Shringar'

MATERIALS AND METHODS

The experiment was conducted in Horticulture Department of Sh. F.H. (P.G.) College, Nidhauri Kalan, Etah (U.P.) to study the effect of packaging and chemical treatments on keeping quality of cut tuberose spikes. Immediately after harvesting, spikes were placed into bucket containing distilled water and brought to the laboratory. The length of all spikes was kept constant (40cm) from the cut end of the base to the tip of the spike. The cut end of the spikes were dipped in disinfectant *i.e.*, $HgCl_2$ (1%) to remove outside infection. Then, the rachis base of each spike was slantingly cut with the help of sharp blade to increase absorption area and kept under distilled water to prevent the entry of air bubbles. After recording the fresh weight and length of spikes, these were placed in 300 ml glass bottle as vase containing 200 ml aqueous solution of various preservative such as sodium hypochloride (100 ppm), aluminium sulphate (300 ppm), citric acid (300 ppm), cobalt chloride (100 ppm) and silver nitrate (25 ppm) were used with sucrose (4%) and distilled water as control to study their effect on vase life and other quality parameters of cut tuberose flower. The neck of each bottle was covered with the help of aluminium foil to check evaporation of the solution or distilled water. For studying the effect of packing material and simulated transit on the vase life of cut tuberose spikes: the spikes were made into bundles