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Effect of chemicals on vase life of cut tuberose [*Polianthes tuberosa* (L.) cv. SINGLE

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ABSTRACT

An experiment was carried out in the Department of Horticulture, Marathwada Agricultural University, Parbhani during the year 2003-2004 in order to investigate the effect of certain chemicals on vase life of cut tuberoses cv. SINGLE. The chemicals used were each at two concentrations *i.e.* copper sulphate (0.2% and 0.4%), Silver nitrate (0.03% and 0.04%), citric acid (0.3% and 0.4%), sucrose (2% and 4%) and distilled water taken as a control. The results revealed that the chemical treatments were found significantly superior over control. The higher concentration of chemicals was found superior than lower concentration, sucrose (4%) found superior over all other treatments followed by sucrose (2%) and citric acid (4%) for increasing vaselife parameters such as flower diameter, number of florets opened and also increased spike length. Distilled water (control) treatment recorded minimum vase life and other vaselife parameters.

Key words : Cut tuberose, Chemicals, Vase life

Tuberose (*Polianthes tuberosa* L.) is an important ornamental bulbous plant which is commercially grown for its cut flowers. It occupies a prime position among commercial flower crops, which has demand in both domestic and international markets. The flower growers often face with the problem of storage and preservation of flowering spikes of tuberose harvested during June to September. Vaselife of cut tuberose in tap water under good environmental condition is usually less than one week. The commercial practice of cutting spikes when only a pair of lower florets are open, this results in poor development of spike and shedding of florets at the tip. Extension of vaselife and improvement of florets quality are highly desirable to keep flower fresh or in acceptable conditions. Not all cut flowers respond alike, but the addition of chemicals to vase water is practical means of prolonging the life of many flowers. Pathak *et al*. (1979) observed that the sucrose is effective in prolonging the prolonging the vaselife of fully opened flowers of gladiolus. Sathyanarayana *et al*. (1996) found that the citric acid individually and in combination with sucrose increased the vaselife and quality of tuberose flower spikes. Therefore, the present study was undertaken to optimize the concentration of different chemicals on post harvest life of cut tuberoses cv. SINGLE, in order to boost the value of tuberose spikes which would be beneficial to growers and consumers.

MATERIALS AND METHODS

Tuberose was grown in the Department of Horticulture, Marathwada Agricultural University, Parbhani following recommended cultural practices. The spikes were harvested early in the morning by 6.00 a.m. when basal two florets opened and immediately spikes were kept in the bucket containing fresh water and brought to the laboratory. Flower spikes were given a slanting cut at the base and three spikes of uniform length (45 cm) were placed in conical flask containing 500 ml of solutions of various chemicals *i.e*. copper sulphate 0.2% (T_1), copper sulphate 0.4% (T_2), silver nitrate 0.03% (T_3), silver nitrate 0.04% (T_4), citric acid 0.3% (T_5), citric acid 0.4% (T_6), sucrose 2% (T_7), sucrose 4% (T_8) and distilled water (T_9) as a control. Three replications were maintained. Recommended temperature and relative humidity during the experiment were 25-39^{0}C and 75-80%, respectively. Observations recorded were percentage of opening of florets on the spike, floret diameter (cm), increase in spike length (cm), volume of water consumed/3 spikes and vaselife (days). Results thus obtained were statistically analysed.

RESULTS AND DISCUSSION

The data regarding the effect of chemicals on the vaselife of tuberose cv. SINGLE and related aspects are presented in Table 1.

Per cent of opening of florets per spike :

All the chemicals recorded higher per cent of opening of floret/spike over control. The maximum per cent of opened florets (89.04%) was observed with sucrose 4%