

POSTHARVEST LIFE OF CUT GLADIOLUS SPIKES AS INFLUENCED BY DIFFERENT PRESERVATIVE SOLUTIONS

Sucrose in combination with floral preservative chemicals are known to promote the quality and prolong the vase life of many cut flowers. This study was done to test the effect of three floral preservative chemicals in combination with 5% sucrose on vase life of cut flowers of gladiolus cv. Oscar.

The different treatments tried were as follows :

- T₁ - Distilled water (control)
- T₂ - Sucrose 5 per cent
+ 8-hydroxyquinoline 300 mg l⁻¹
- T₃ - Sucrose 5 per cent
+ 8-hydroxyquinoline 600 mg l⁻¹
- T₄ - Sucrose 5 per cent + aluminium sulphate 100 mg l⁻¹
- T₅ - Sucrose 5 per cent + aluminium sulphate 300 mg l⁻¹
- T₆ - Sucrose 5 per cent + silver nitrate 100 mg l⁻¹
- T₇ - Sucrose 5 per cent + silver nitrate 200 mg l⁻¹

Spikes were cut when the lower most florets started unfolding and were immediately placed in the holding solutions. Observations were recorded on the vase life (period in days from opening of the first floret to drying of the last fully opened floret), floret size (diameter of the second floret from the base), days taken for spike bending and number of florets open at a

time. Estimation of the anthocyanin pigment content in the petals was done as per the method described by Ranganna (1977).

Treatments T₂ and T₃ (vase solutions containing 8-HQ) were found to produce the maximum effect on vase life, number of florets and floret size and in delaying spike bending (Table 1). The effectiveness of 8-HQ as a germicide in the vase solutions of other cut flowers like rose and chrysanthemum has long been proved (Marousky, 1973; Gao and Wu, 1990). 8-HQ also optimized the water equilibrium within cut spike, thus maintaining freshness and delaying spike bending (Wang and Gu, 1985).

Vase solutions containing AgNO₃ (T₆ and T₇) also significantly improved the vase life of cut gladiolus compared to T₄, T₅ and control. The effect of silver nitrate could be attributed to its role as an ethylene antagonist and bactericide (Halevy and Mayak, 1981). It also reduces vascular plugging at the cut end of spikes (Choi and Roh, 1980; Deswal and Patil, 1982).

Retention of anthocyanin pigments in the florets was also maximum in T₂ and T₃. Al₂(SO₄)₃ in the vase solution effected better retention of colour pigments than AgNO₃. Al₂(SO₄)₃ can be considered as a cheap and adequate substitute for costlier germicides like 8-HQ and AgNO₃ (Rameshwar, 1974).

Table 1. Effect of vase solutions on post harvest life of cut spikes of gladiolus cv. Oscar

Treatments	Vase life (days)	Spike bending (days)	Floret size (cm)	No. of open florets	Anthocyanin content (mg/100g sample)
T ₁	7.39	5.56	11.90	3.22	321.74
T ₂	12.22	10.50	13.47	3.83	433.80
T ₃	13.44	11.94	14.26	4.83	459.46
T ₄	9.72	7.22	12.62	3.39	435.43
T ₅	10.67	7.67	12.70	3.78	448.07
T ₆	10.33	8.17	13.16	3.83	405.33
T ₇	11.28	8.94	13.47	4.11	412.36
CD (0.05)	0.921	0.930	0.330	0.338	34.414

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College of Agriculture,
Vellayani,
Thiruvananthapuram - 695 522

S.SUNEETHA
K. VASANTHA KUMAR