G

ladiolus have important position in cut flower
industry of the India as well as world. It is used for
the making of bouquets and other decoration
purposes. Cut gladiolus spikes suffer from relatively short
vase-life. Among the most common reasons for early
senescence of fresh cut spikes are both the inability of stems
to absorb water due to their blockage and the short supply of
carbohydrates to support respiration (Halevy and Mayak, 1979
and Murali and Reddy, 1993). The inability of stems to absorb
water is a very common reason for premature wilting. Low
carbohydrate is another reason for flowers deterioration.
Supplying cut flowers with carbohydrate sources could
prolong flower vase life and improve flower quality. Several

studies indicated that the floral preservatives should perform
two functions: provide carbohydrate, and supply a bactericide
to prevent microbial growth and to block water-conductive
system in the stem (Halevy and Mayak, 1979 and Han, 1998).
Although the role of external carbohydrate supply on
photosynthetic pigments may be less clear (Bosma and Dole,
2002), however, some research stated that photosynthetic
pigments are positively correlated with the supply of
carbohydrates. The objective of this study was to determine
the effect of biocide (AgNO₃ and 8-HQC) and various
concentrations of sucrose on the vase life of cut gladiolus cv.
WHITE PROSPERITY.
RESEARCH METHODS

The present investigation was conducted in the laboratory Department of Horticulture, Choudhary Charan Singh University, Meerut. One commercial cultivar of gladiolus *i.e.* White Prosperity was used for this study. Gladiolus spikes were harvested when lower two floret shows colour and placed in bouquet which contained water and immediately brought to the laboratory. After that uniform spikes were selected for study and re-cut with the help of sharp knife at 2.5 cm from the point of previous cut. Spikes were kept in the conical flask containing different chemical preservatives solutions (sucrose 2 per cent, sucrose 2 per cent + AgNO₃ 400 ppm, sucrose 4 per cent, sucrose 4 per cent + 8-HQC 400 ppm, sucrose 4 per cent + AgNO₃ 400 ppm, 8-HQC 400 ppm and control *i.e.* distilled water). The laboratory experiment was conducted in Completely Randomized Design (CRD) with three replications. Observations on different parameters were recorded daily. These parameters were solution uptake, floret opened percentage, vase-life (days). Results thus obtained were analyzed statistically.

RESEARCH FINDINGS AND DISCUSSION

The results obtained in the present investigation indicate that maximum uptake of solution (ml/spike) was recorded with sucrose 2 per cent + 8-HQC 400 ppm treatment followed by sucrose 2 per cent + AgNO₃ 400 ppm treatment (Table 1). Similar results were reported in gladiolus by Mani et al. (2002) and Rekha et al. (2001). In respect of floret opened/spike, all the treatments influenced significantly over the control. Maximum floret opened/spike was recorded with the sucrose 2 per cent + AgNO₃ 400 ppm treatment, while minimum value was obtained with control. All the treatments significantly influenced the floret opened percentage, whereas, highest value was obtained with sucrose 2 per cent + 8-HQC 400 ppm treatment followed by sucrose 2 per cent + AgNO₃ 400 ppm treatment and minimum with control. These results are in close conformity with findings of Beura and Singh (2001). There was significant variation in floret diameter of cut spike of gladiolus when observations were made at 3rd day, 6th day and at senescence day. Maximum floret diameter was recorded with treatment sucrose 2 per cent + 8-HQC 400 ppm at 3rd, at 6th and at senescence day followed by treatment with sucrose 2 per cent + AgNO₃ 400 ppm at 3rd, at 6th day and senescence day while minimum florets diameter was observed with control. This finding is experimentally substantiated with the observation made by Beura and Singh (2002). The data revealed that vase life of cut spikes showed significant variation under different treatments. The maximum vase life (13 day) was observed in cv. White Prosperity with treatment sucrose 2 per cent + 8-HQC 200 ppm treatment followed by sucrose 2 per cent + AgNO₃ 400 ppm treatment, whereas minimum vase life (5 days) was recorded with control (distilled water). Results are in close conformity with the observation made by Pal and Kumar (2004) and Bhosale et al. (2002). Based upon the present findings it can be concluded that sucrose and biocide treatments significantly influenced the various characters of cut spike of gladiolus cv. WHITE PROSPERITY viz., uptake of solution, floret diameter, floret opened percentage, floret opened per spike and vase-life over the control.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Uptake of solution</th>
<th>Floret opened per spike</th>
<th>Floret diameter (cm)</th>
<th>Floret opened %</th>
<th>Vase-life(days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3rd day</td>
<td>6th day</td>
<td>Senescence day</td>
<td>3rd day</td>
<td>6th day</td>
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<td>Sucrose 2%</td>
<td>17.00</td>
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<td>96.67</td>
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<tr>
<td>Sucrose 4% + AgNO₃ 400 ppm</td>
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<td>92.00</td>
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<tr>
<td>8-HQC 400 ppm</td>
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</table>

Table 1 : Effect of chemical preservatives on different parameters of gladiolus
REFERENCES


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