

## POST HARVEST EFFECT OF FLUORIDE AND OTHER CHEMICALS ON THE VASE LIFE OF *GAILLARDIA PULCHELLA* CUT FLOWERS

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In the present experiment effect of fluoride and other chemicals on the post harvest vase life of cut flowers were studied. Silver nitrate gave better results followed by sucrose and benzyl adenine respectively. Benzyl adenine reduced the negative effect of fluoride but silver nitrate could not reverse the effect of fluoride.

**Keywords** :Fluoride; *Gaillardia*; Vase life.

The Prospects of floriculture industry is increasing continuously and is being considered as a promising foreign exchange earner<sup>1,2</sup>. Floriculture is being identified as one of the thrust areas by the government of India and also the government of Andhra Pradesh<sup>3</sup>. Various types of flowers are used for different purposes and new types are added. In the cultivation of flowers, one of the main limitations among other things in the post harvest losses and in the keeping quality of flowers for longer duration during long distance transport from field to market. Various methods are adopted to increase the shelf life of cut flowers<sup>4-7</sup>. One of the best method is to use chemicals or preservatives in the liquid medium to preserve the flowers. Fluoride is considered as one of the pollutant present in the soil in many areas, which may cause injury to the crop plants and thereby reduce the marketable quality of plants by developing marginal and tip necrosis.

In the present experiment methods are developed to increase the vase life of *Gaillardia pulchella* cut flowers in the presence of fluoride there by overcoming the injurious effect of fluoride and increase the marketable quality of cut flowers. *Gaillardia* plants were grown in the field in controlled conditions in the botanic garden of the department of Botany, Osmania University. Plants were regularly watered and normal cultivation practices were employed, with adequate fertilization. Flowers with same age and length were cut and immediately kept in 20ml of treatment solutions in test tubes

as described in table No. 1. Cut flowers kept in distilled water served as the control. The test tubes were kept in 25<sup>o</sup>-35<sup>o</sup>C under 12 hrs. light and 8 hrs dark period in the laboratory. There were five replicates in each treatment.

Cut flowers treated with silver nitrate alone made the flowers remain fresh for maximum number of days (10 days). Next best results were seen in sucrose alone and silver nitrate along with benzyl adenine. Positive effect of silver nitrate was nullified when cut flowers were treated with fluoride along with silver nitrate. The positive effect of increasing the vase life of cut flowers in the treatment with benzyl adenine is not influenced by the simultaneous presence of fluoride. This indicates that benzyl adenine reversed the negative effect of fluoride. Sucrose treatment gave better vase life but sucrose along with fluoride did not. This indicates that fluoride is an antagonist in the presence of sucrose.

### References

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**Table 1.** Post harvest effect of fluoride and other chemicals on the vase life of *Gaillardia pulchella* cut flowers(\*).

Treatment	Vase life in days(**)
1. Control	5
2. Fluoride	5
3. Sucrose	7
4. Fluoride + Sucrose	5
5. Boron	4
6. Fluoride + Sucrose	6
7. Boron + Sucrose	6
8. Fluoride + Boron + Sucrose	3
9. Silver Nitrate	10
10. Fluoride + Silver Nitrate	5
11. Benzyl Adenine	6
12. Fluoride + Benzyl Adenine	6
13. Silver Nitrate + Benzyl Adenine	7
14. Fluoride + Silver Nitrate + Benzyl Adenine	6

(\*) Cncentration of Fluoride = 10 ppm, Sucrose = 2%, Benzyl Adenine = 200 ppm,

Boron = 0.5 ppm, Sucrose = 2%, Silver Nitrate = 25 ppm.

(\*\*) Values are average of five replicates.