

Effect of Different Chemicals on Vase Life of Heliconia CV. Golden Torch

Lalge T.B.¹, R. S. Rodge², Rangwala A.D.³

Department of Horticulture, college of Agriculture, Dapoli, Dist. Ratnagiri. State Maharashtra

Abstract- An experiment was carried out on cut flowers spikes of Heliconia cv. Golden Torch to study the effect of different chemical, with two level of sucrose 2.5% & 5% with Citric acid 250 ppm, 8-Hydroxy qunoline citrate (8-HQC) 200 ppm, Benzyl adenine (BA) 300 ppm, Silver nitrate (AgNO₃) 100 ppm and control (Distilled water). The experiment was laid out in a completely randomized design replicated thrice. The Sucrose $(2.5\%) + AgNO_3$ (100 ppm) recorded maximum vase life of 24.36 days which was significant superior over all the treatments.

Keywords : Vase Life, Heliconia, Tolden Torch

Introduction

Heliconia is mostly grown for cut flower and garden adornment. Heliconia belongs to family Heliconiaceae. *Heliconia psittacorum* spathocircinata cv. Golden Torch, especially large golden yellow with rigid flowers like golden sun rays have resulted from selective breeding for colour, longevity and durable texture, larger (upto 2.4m)

The post harvest behaviour of cut flower is an outcome of physiological processes occurring in leaves, stem, flower buds, peduncle. After harvesting, cut flowers carry on all the life processes at the expense of stored reserve food in the form of carbohydrates, proteins and fats for their longevity. Besides, the pre-harvest and harvest factors, the postharvest factors such as conditioning, pre-cooling, pulsing, holding solution, storage environments, packaging material and micro-organism etc. influence the postharvest quality and longevity of cut flowers.

It is known for many years that use of preservatives in holding solutions promote the quality and prolong the vase life of cut flowers. The holding solution contains low level of sugar combined with carbohydrates, germicides, growth regulators, anti-ethylene compounds, mineral salts and organic acids to prolong the vase life and flower quality.

Materials & Method

The experiment was conducted in laboratory of College of Agriculture, Dapoli, Dist. Ratnagiri (M.S.) during the year 2008-09, using Completely Randomized Design (CRD) with three replication of nine treatments. This experiment included two level of sucrose 2.5% & 5% with Citric acid 250 ppm, 8-Hydroxy qunoline citrate (8-HQC) 200 ppm, Benzyl adenine (BA) 300 ppm, Silver nitrate (AgNO₃) 100 ppm and control (Distilled water). The flower spikes were obtained from the college farm. The flowering stems were trimmed to a uniform length of 45 cm. Then a smooth slanting cut were made to flower stem to facilitate the optimum up take of given solutions. Cutting had been done underwater to avoid air embolisms. All leaves on the lower section of the stem were re-moved. These harvested spikes were kept in the glass bottles, dipping the cut stalk ends in the respective holding solution of nine treatments with three replications. Each treatment contains five flowers. The stalk ends were cut about 1 cm every day under water to avoid clogging of vascular bundles. The number of days up to which these spikes remained in good condition (when 25 per cent of the flower tips started becoming dry and brown) and average was calculated. The statistical analysis of the data was done by standard method of analysis of variance.

Result and Discussion

Table 1. Effect of different chemicals on vase life of heliconia cv. Golden Torch

Treatments	Vase life in days
T1: Sucrose (2.5%) + Citric acid (250 ppm)	16.67
T2: Sucrose (5%) + Citric acid (250 ppm)	17.77
T3: Sucrose (2.5%) + 8-HQC (200 ppm)	19.91
T4: Sucrose (5%) + 8-HQC (200 ppm)	18.11

T5: Sucrose (2.5%) + BA (300 ppm)	17.77
T6: Sucrose (5%) + BA (300 ppm)	16.78
T7: Sucrose (2.5%) + A gNO ₃ (100 ppm)	24.36
T8: Sucrose (5%) + A gNO ₃ (100 ppm)	20.30
T9: Control	14.67
S.E.±	1.35
CD at 5%	3.85

Data presented in Table 1 indicates that, the vase life was maximum (24.36 days) in treatment T7 [Sucrose $(2.5\%) + \text{AgNO}_3$ (100 ppm)] which was significant superior over all the treatments whereas, significantly minimum (14.67 days) with control (T9).

AgNO3 is very potent inhibitors of ethylene action in plant tissues. The treatment AgNO3 may be decreased the ethylene production by the two cut flowers tested comparison with the control. It also provides some antimicrobial activity inside plant tissues, thus it is beneficial for ethylene-sensitive flowers such as carnation (Nowak ,J.,Rudniicki,R.M.1990, Ohkawa K., Kusuhara Y. & Suh J.N.1999). Vase life increases due to the nutrient effect of sucrose (Delaporte K.L., Klieber A. & Sedgley M. 2000)

Nair, et al (2003) study the effect of (Ag NO3) plus sucrose in different concentration on vase life of gerbera cut flower, the treatment extended the vase life and delaying the head dropping and discoloration. Presented findings are in accordance with Sali (2007) who reported that vase life of gladiolus spike increased with AgNO₃ 300 ppm as compared to control by 3.2 days.

Conclusion

A significant improvement in vase life of heliconia cut flowers was occurred when treated with Sucrose $(2.5\%) + AgNO_3$ (100 ppm)

References

Delaporte K.L., Klieber A. & Sedgley M. (2000) *Postharvest Biology and Technology*, 19(2), 181-186. Ohkawa K., Kusuhara Y. & Suh J.N. (1999) *HortScience*, 34, 112-113.

- Nair S.A., Singh V. and Sharma T.V. (2003) Jour. Tropic. Agric., 41, 56-58.
- Nowak ,J.,Rudniicki,R.M.(1990)Postharvest handling and storage of cut flowers florist ,green and potted plants .Timber Press, Inc.PP:39-43.
- Sali, R. R. (2007). Performance of some gladiolus varieties under north konkan agroclimatic condition. M.Sc. (Agri.) Thesis submitted to Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.