



P-ISSN: 2349-8528

E-ISSN: 2321-4902

IJCS 2019; 7(2): 2205-2207

© 2019 IJCS

Received: 11-01-2019

Accepted: 15-02-2019

Deepa MS

Senior Assistant, Director of Horticulture, Bengaluru, Karnataka, India

Sudarshan GK

Assistant Professor, Department of Plant Pathology, University of Horticultural sciences, Bagalkot, Karnataka, India

Keerthishankar K

Ph.D Scholar, Department of Floriculture and Landscape Architecture, University of Horticultural Sciences, Bagalkot, Karnataka, India

Yathindra HA

Assistant Professor, Department of Floriculture and Landscape Architecture, University of Horticultural sciences, Bagalkot, Karnataka, India

Mutthuraju GP

Assistant Professor, Department of Entomology, University of Horticultural sciences, Bagalkot, Karnataka, India

Varietal evaluation of gerbera (*Gerbera jamesonii*) in different growing structure for quality flowering

Deepa MS, Sudarshan GK, Keerthishankar K, Yathindra HA and Mutthuraju GP

Abstract

An experiment was conducted to evaluate ten varieties of gerbera for quality of the flower under different growing structure. The experiment was laid out in Factorial randomized complete block design with 10 treatments and each treatment was replicated thrice. Cultivar Luxes had maximum stalk length (57.36 cm) under poly house; Diameter of the flower was more in the cultivar Bonnie (0.68 cm) under shade house condition. Cultivar Sciella recorded maximum flower diameters under both shade house (10.51 cm) and polyhouse (10.04 cm) condition. The disc diameter of flower was maximum in the cultivar Luxes (2.44 cm), Cultivar Carocci had maximum number of petals (72.33) under shade house environment. Rosella and Cassiana under shade house condition recorded higher ray florets length (5.18 cm and 5.13 cm, respectively) and Cv. Carocci has maximum florets width (1.49 cm) and highest vase life (13.67 days) under shade house condition.

Keywords: Varietal evaluation, growing structure, quality flowering

Introduction

Gerbera commonly known as "Transval daisy" is an important cut flower grown throughout the world. Gerbera produces a flower with long stalks and daisy like flower hence it is also called as "Barbeton daisy" or "African daisy". Variety with different colour and size made this flower as attractive and used for garden decoration and flower arrangement.

It is difficult to get a good quality cut blooms under open condition. To meet the both quality and quantity of the flower, we have to be grown under protected condition only. The market requirement for exporting of gerbera is very specific and it can be meet consistently only when the flower is grown under protected condition, There are so many variation are available in gerbera in different colour, shape and form but selection of particular cultivar for a specific region is one of the key factors enhancing the yield and quality of the flower. Considering the above facts, the present research work was planned to study the performance of gerbera cultivars under different growing structure.

Material Method

The present research was carried out at college of Horticulture, Arbhavito evaluate 10 gerbera cultivars under different growing structures (Polyhouse and shade net). The experiment consisting of 10 cultivars like Alberibo, Ambra, Ariyana, Bonnie, Carocci, Cassiana, Devil, Luxes, Rosella, Sciella were selected. Healthy rooted plants of 30 days old (2 - 4 leaf stage) were planted at the spacing of 30 X 30 cm under polyhouse and shade house condition. The experiment was laid out in Factorial randomized complete block design with 10 treatments and 2 factors (cultivars and growing structure) each treatment was replicated thrice. The recommended package of practices was followed for raising the successful crop. Observation were recorded from 5 plants in each replication in different quality parameters of flowers and data were statistically analysis as per the procedure given by panse and sukhatme (1984) [6] and tabulated in Table 1 and 2.

Results and Discussion

The observation data regarding quality of gerbera flowers are presented in table 1 and 2. There was significant difference among the different cultivars under different growing structure with

Correspondence**Deepa MS**

Senior Assistant, Director of Horticulture, Bengaluru, Karnataka, India

respect to quality of flowers like stalk length, stalk diameter, flower diameters, diameters of the disc florets, number of petals per flowers, length of the ray florets, width of ray florets and vase life of flowers.

Cultivar Luxes had maximum stalk length (57.36 cm) under polyhouse which was followed by cultivar Cassiana (53.72 cm) under shade house. Stalk length was minimum in cultivar Rosella (40.11 cm) grown under polyhouse.

Stalk diameter was more in the cultivar Bonnie (0.68 cm) under shade house condition followed by Cultivar Sciella (0.63 cm) under the same growing structure, minimum flower girth was found in the cultivar Devil (0.37 cm) under polyhouse condition.

Cultivar Sciella recorded maximum flower diameters under both shade house (10.51 cm) and polyhouse (10.04 cm) condition, followed by Cultivar Luxes (10.00 cm) under polyhouse structure. Flower diameters were less in Cultivar Ariyana (7.81 cm), Cassiana (8.40 cm) and Ambra (8.40 cm) under shade house growing condition.

The disc diameter of flower was maximum in the cultivar Luxes (2.44 cm), followed by Sciella (2.35 cm), Carocci (2.33 cm) under shade house condition and minimum flower disc diameter was in cultivar Alberino (1.60 cm) when it is grown under polyhouse condition.

Cultivar Carocci had maximum number of petals (72.33) under shade house environment, followed by Aryana (66.00) and Rosella (65.00) under polyhouse condition. Cultivar Devil recorded least number of Petals under both polyhouse (41.98) and shade house (42.50) condition.

The effects of growing condition and cultivars on ray florets length did not differ significantly. But, Cvs Rosella and

Cassiana under shade house condition recorded higher ray florets length (5.18 cm and 5.13 cm, respectively), while Cv. Sciella recorded lower length of 3.16 cm under shade house condition.

Significant difference was observed for ray florets width under different growing structure, Cv. Carocci has maximum florets width (1.49 cm) under shade house condition and minimum width was recorded in the Cv. Rosella (0.75 cm) under polyhouse condition.

The Cv. Carocci had maximum vase life (13.67 days) under shade house condition and it was on par with cultivar Bonnie (13.17 days) and Sciella (13.00 days) under same condition, while the cultivar Ariyana recorded shortest vase life under both polyhouse (6.33 days) and shade house (5.50 days) condition.

This variation in flowering characters like flower stalk length may be attributed to the response of cultivars of varying genetic makeup with environmental factors and increased light intensity inside the green house might have increased the stalk length, flower diameter, disc diameter, number of petals per flower, and width of ray florets. Similar variations have been reported previously by Kandpal *et al.* (2003) [3] Mahanta and Paswan (2003) [4] and Mendal and Biswas (2003) [5] in gerbera. Longer vase life may be due to vigorous vegetative growth which might have helped the plants to synthesis more photosynthates which enabled the plant to supply and accumulate in the flower stalk and to carry out the metabolic activity after harvesting of the flowers. Similarly variation in vase life was reported by Gaikwad *et al.*, (2002) [2] in chrysanthemum.

Table 1: Flower quality (a) parameters of gerbera cultivars as influenced by different growing conditions and cultivars.

Cultivars	Flower diameters (cm)	Stalk length (cm)	Stalk girth (cm)	Disc florets diameters (cm)
S ₁ C ₁	8.87	45.15	0.46	1.60
S ₁ C ₂	8.56	46.94	0.54	1.63
S ₁ C ₃	8.70	47.44	0.42	1.85
S ₁ C ₄	9.43	49.33	0.56	1.68
S ₁ C ₅	9.12	50.00	0.43	1.95
S ₁ C ₆	9.48	51.92	0.52	2.12
S ₁ C ₇	9.75	47.83	0.37	1.78
S ₁ C ₈	10.00	57.36	0.61	1.63
S ₁ C ₉	9.61	40.11	0.56	1.87
S ₁ C ₁₀	10.04	51.81	0.43	1.71
S ₂ C ₁	8.88	46.76	0.53	2.04
S ₂ C ₂	8.40	46.63	0.58	1.99
S ₂ C ₃	7.81	48.58	0.46	2.07
S ₂ C ₄	9.33	48.80	0.68	1.99
S ₂ C ₅	9.40	52.53	0.56	2.33
S ₂ C ₆	8.40	53.72	0.47	2.15
S ₂ C ₇	9.67	50.40	0.48	1.97
S ₂ C ₈	9.88	52.94	0.52	2.44
S ₂ C ₉	9.70	43.67	0.55	2.28
S ₂ C ₁₀	10.51	48.81	0.63	2.35
S. Em	0.20	1.52	0.03	0.10
CD at 5 %	0.57	NS	0.10	0.29

Conditions: Polyhouse (S₁) Shade house (S₂)

Cultivars: Alberino (C₁), Ambra (C₂), Ariyana (C₃), Bonnie (C₄), Carocci (C₅), Cassiana (C₆), Devi (C₇), Luxes (C₈), Rosella (C₉), Sciella (C₁₀)

Table 2: Flower quality (b) parameters of gerbera cultivars as influenced by different growing conditions and cultivars.

Cultivars	Number of ray florets (no's)	Length of ray florets (cm)	Width of ray florets (cm)	Vase life (days)
S ₁ C ₁	57.50	4.46	0.80	6.00
S ₁ C ₂	61.50	3.96	0.85	11.83
S ₁ C ₃	66.00	4.35	0.88	6.33
S ₁ C ₄	51.50	3.98	0.90	12.00
S ₁ C ₅	53.00	3.94	0.82	13.00
S ₁ C ₆	62.29	4.43	0.76	7.33
S ₁ C ₇	41.98	4.82	1.01	7.83
S ₁ C ₈	51.67	4.39	0.90	7.50
S ₁ C ₉	65.00	4.84	0.82	12.00
S ₁ C ₁₀	54.75	4.90	1.09	12.50
S ₂ C ₁	64.92	4.10	0.86	6.83
S ₂ C ₂	61.63	4.10	0.79	11.83
S ₂ C ₃	62.17	4.41	0.83	5.50
S ₂ C ₄	57.68	4.57	0.98	13.17
S ₂ C ₅	72.33	3.79	1.49	13.67
S ₂ C ₆	55.00	5.13	0.95	6.83
S ₂ C ₇	42.50	4.67	1.05	7.67
S ₂ C ₈	52.67	3.39	1.05	7.83
S ₂ C ₉	62.17	5.18	0.75	10.83
S ₂ C ₁₀	64.30	3.16	1.06	13.00
S. Em	2.13	0.46	0.08	0.33
CD at 5 %	6.10	NS	0.23	0.93

Conditions: Polyhouse (S₁) Shade house (S₂).

Cultivars: Alberino (C₁), Ambra (C₂), Ariyana (C₃), Bonnie (C₄), Carocci (C₅), Cassiana (C₆), Devi (C₇), Luxes (C₈), Rosella (C₉), Sciella (C₁₀).

References

- Ahlawat TR, Barad AV, Jat G. Evaluation of gerbera cultivar under naturally ventilated polyhouse. Indian J. of Hort., 69 (4): 606-608 Kumar, D., and Kumar R. Effect of modified environments on gerbera. J. Orna. Hort. 2012; 4(1): 33-35.
- Gaikwad, AM, Katwate SM, Nimbalkar CA. Evaluation of chrysanthemum varieties under poly house condition. South Indian Horticulture. 2002; 50(4-6):624-628.
- Kandpal K, Kumar S, Srivastava R, Ramchandra. Evaluation of gerbera (*Gerbera jamesonii*) cultivars under Tarai condition. Journal of Ornamental Horticulture. 2003; 6(3):252-255.
- Mahanta P, Paswan L. Assessment of comparative performance of some gerbera (*Gerbera jamesonii* L.) cultivars under open condition and plastic rain shelter in Assam condition. National Symposium on Recent Advances in Indian Floriculture, Trichr, 12-14 Nov., proceedings of Indian society of ornamental Horticulture. 2003; 12-14:154-165.
- Mandal Biswas B. Effect of different growing environments on growth and flowering of gerbera (*Gerbera jamesonii* L.) National Symposium on Recent Advances in Indian Floriculture, Trichr, 12-14 Nov., proceedings of Indian society of ornamental Horticulture. 2003; 12-14:56-59.
- Panse VG, Sukhatme PV. Statistical Methods for Agricultural Workers. Third edition, Indian Council of Agricultural Research, New Delhi, 1984.
- Paramveer Singh, Ajay Bhardwaj, Randhir Kumar and Deepti Singh. Evaluation of Gerbera Varieties for Yield and Quality under Protected Environment Conditions in Bihar. Int. J. Curr. Microbiol. App. Sci. 2017; 6(9):112-116.
- Sarmah D, Kolukunde S, Mandal T. Evaluation of gerbera varieties for growth and flowering under polyhouse in the plains of west Bengal. International Journal of Scientific Research. 2014; 3(12):135-136.