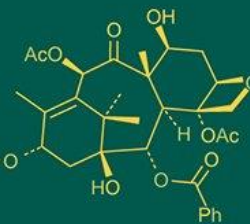
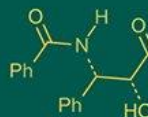


International Journal of Advanced Biochemistry Research



ISSN Print: 2617-4693
ISSN Online: 2617-4707
NAAS Rating (2025): 5.29
IJABR 2025; SP-9(10): 1352-1354
www.biochemjournal.com
Received: 16-07-2025
Accepted: 19-08-2025

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Performance of gerbera (*Gerbera jamesonii*) varieties under shadenet

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DOI: <https://www.doi.org/10.33545/26174693.2025.v9.i10Sq.6012>

Abstract

An experiment was conducted during 2024-25 at the department of Horticulture, VNMKV, Parbhani. This research aimed to examine the performance of ten gerbera varieties under shadenet condition. The experiment was laid out in complete randomized design (CRD) with ten treatments consisting of the different varieties viz. Honey Ball, Pinnacles, Fundy, Bighorn, Pole Star, Diabolo, Atlanta, Artist, Everglades, Glorious Yellow and three replications, each replication consisted five plants. Glorious Yellow recorded the maximum plant height (47.26 cm), stalk girth (0.68 cm) and life span of flower on plant (15.93 days). Minimum days required for development of flower (14.60 days) was calculated in Glorious Yellow. Pole Star produced the highest number of leaves (30.16). Maximum leaf area (156.12 cm²) and flower disc diameter (4.05 cm) was noted in Diabolo. Least days required for first flower opening (8.26 days) was observed in Diabolo. Everglades produced the largest flower diameter (10.22 cm) and longest vase life (10.60 days). Artist had the maximum stalk length (42.88 cm) and required minimum days for initiation of first bud (49.26 days). The highest total number of flower per plant (10.20) was observed in Bighorn. The overall study revealed that Glorious Yellow, Everglades, Pole Star and Diabolo emerged as the most promising varieties among other varieties.

Keywords: Performance, gerbera, pot culture, shadenet, vase life, shadenet

Introduction

Gerbera (*Gerbera jamesonii*) belongs to Asteraceae family. Chromosome number of gerbera is $2n = 50$. Genus gerbera consists of forty species of half-hardy and perennial flowering plants (Baily, 1963) ^[1]. About seven species were grown in India and distributed in temperate Himalayas from Kashmir to Nepal at an altitude of 1,300 to 3,200 meters. *Gerbera* species of Indian origin are *Gerbera andria*, *G. kunzeana*, *G. languinosa*, *G. macrophylla*, *G. nivea*, *G. ovalifolia* and *G. poiloselloides*. The cultivated species in this genus are *Gerbera asplenifolia*, *G. aurantica*, *G. kunzeana* and *G. viridifolia*. These are stemless perennial herbs (Bhattacharjee and De, 2003) ^[2]. It commonly known as Transvaal daisy, Barbertain daisy and African daisy is widely used as a cut flower. Gerbera valued for its vibrant colors, attractive form and long vase life. Gerbera is native to tropical Asia and Africa and extensively cultivated in temperate, subtropical and Mediterranean climates. In India, it is commercially grown in states such as Karnataka, Maharashtra and Tamil Nadu, often under protected cultivation to ensure quality and year-round production.

Gerbera can be propagated both sexually through seed and asexually via clump division and cuttings. Gerbera is well-suited for pot culture. A compost that is porous, rich in organic matter and with good moisture retention. For commercial production it is successfully grown in greenhouses, shadenets and polyhouses. Pot culture of gerbera has many advantages like reduced disease transmission, controlled nutrient delivery and improved working conditions, resulting in higher flower production.

Considering the importance of this crop, there is prime need for its improvement through selection of suitable varieties. It is very much necessary to compare gerbera varieties. Present investigation was conducted to study the relative performance of 10 varieties of gerbera for their growth, flower quality and yield characters for pot culture under shadenet condition.

Materials and Methods

The present investigation was carried out in the Department of Horticulture VNMKV, Parbhani during August 2024 to February 2025. The experiment was laid out in Complete Randomized Design (CRD) with three replication, each replication consisted five plants and ten treatments viz. Honey Ball, Pinnacles, Fundy, Bighorn, Pole Star, Diabolo, Atlanta, Artist, Everglades, Glorious Yellow were procured from KF Bioplants, Pune with 2-3 leaf stage plant were raised through tissue culture. In this experiment 50 per cent shadenet was used. Tissue cultured plants were transplanted into 30×30 cm plastic pots containing a mixture of 1 part of sand, 1 part of vermicompost and 2 part of red soil i.e. 1:1:2 proportion. During early stage of growth the irrigation was given twice daily in the morning and evening for better establishment of roots. Depending upon soil moisture and weather conditions the pots were irrigated regularly to keep soil moderately moist. Fertigation with NPK (19:19:19) during vegetative phase and (0:34:52) during flowering was applied at 0.4 g/plant. In addition to fertilizer, micronutrients were given as and when the deficiency symptoms were observed. Observation were recorded on growth, quality, flowering and yield.

Results and Discussion

The result obtained from the present investigation on various characters are presented in Table no. 1 and 2. The plant height was ranged from 33.21 to 47.26 cm and it was significantly higher in Glorious Yellow (47.26 cm) which was at par with Everglades (46.54 cm) and Pinnacles (44.46 cm), while Atlanta found lower in plant height (33.21 cm). Similar variations were also reported by Wankhede S. and Gajbhiye R.P. (2013) ^[10] and Singh B. *et al.* (2017) ^[7]. Maximum number of leaves per plant (30.16) was observed in Pole Star it was closely at par with Fundy (29.54) and minimum number of leaves per plant (17.54) was recorded in Everglades. This might be due to varietal characters. Similar results were obtained by Chobe R.R. *et al.* (2010) ^[4] and Wankhede S. and Gajbhiye R.P. (2013) ^[10]. Highest leaf area (156.12 cm²) was recorded in Diabolo which was significantly superior over other varieties, followed by Fundy (135.97 cm²), Glorious Yellow (127.19 cm²), Pinnacles (99.40 cm²) and Artist (97.19 cm²). While lowest leaf area (77.38 cm²) was recorded in Atlanta. It might be due to different individual varietal characters. These results are in accordance with findings of Das C. *et al.* (2012) ^[5] and Vijayalaxmi M. *et al.* (2021) ^[8].

It is revealed from the data regarding flower diameter varied significantly among different varieties under study. Everglades was recorded maximum flower diameter (10.22 cm) and it was at par with Pole Star (10.5 cm), Glorious Yellow (9.79 cm) and Diabolo (9.51 cm). Fundy was recorded minimum flower diameter (8.10 cm). It might be due to inherent character of individual varieties. These findings has also been reported by Chobe R.R. *et al.* (2010) ^[4] and Wankhede S. and Gajbhiye R.P. (2012) ^[9]. Highest stalk length (42.88 cm) was calculated in Artist which was at par with Pole Star (41.47 cm), Diabolo (41.17 cm), Honey Ball (41.10) and Atlanta (40.28 cm). Whereas Glorious Yellow was recorded minimum stalk length (29.42 cm). This might be due to varietal characters. This study was in accordance with the findings of Wankhede S. and Gajbhiye

R.P. (2012) ^[9] and Singh B. *et al.* (2017) ^[7]. Significantly maximum flower stalk girth (0.68 cm) was recorded in Glorious Yellow it was at par with Everglades (0.67 cm), Pole Star (0.65 cm) and Pinnacles (0.64 cm). The minimum flower stalk girth (0.52 cm) was recorded in Atlanta. It might be due to inherent character of individual varieties. These findings has also been reported by Wankhede S. and Gajbhiye R.P. (2012) ^[9] and Singh B. *et al.* (2017) ^[7]. The longest vase life of flower (10.60 days) was calculated in Everglades which was at par with Bighorn (10.13 days), Glorious Yellow (10.06 days), Pinnacles (9.80 days) and Diabolo (9.66 days). Whereas the shortest vase life (8.06 days) was recorded in Pole Star. This might be due to varietal characters. Similar results were obtained by Chobe R.R. *et al.* (2010) ^[4] and Wankhede S. and Gajbhiye R.P. (2013) ^[10]. Significantly maximum disc diameter (4.05 cm) was found in Diabolo it was at par with Pole Star (3.62 cm), whereas the minimum disc diameter (2.18 cm) was observed in Honey Ball. Variation in disc diameter it might be due to individual varietal character. The result is accordance with Chavan B.D. *et al.* (2021) ^[3].

Minimum days required for first flower bud initiation (49.26 DAT) was observed in Artist followed by Pole Star (53.73 DAT), Bighorn (54.06 DAT), Pinnacles (54.33 DAT) and Diabolo (54.53 DAT), whereas Glorious Yellow required maximum days for first flower bud initiation (62.33 DAT). This might be due to varietal characters. Similar variation was reported by Wankhede S. and Gajbhiye R.P. (2012) ^[9]. Significantly least days required for first flower opening (8.26 days) was recorded in Diabolo which was at par with Everglades (9.20 days), Honey Ball (9.93 days), Glorious Yellow (10.26 days), Artist (10.86 days) and Fundy (11.06 days). Maximum days required for first flower opening (15.00 days) was recorded in Pole Star. Variation in days required for first flower opening it might be due to individual varietal character. This study was in accordance with the findings of Vijayalaxmi M. *et al.* (2021) ^[8] and Shreekanth *et al.* (2024) ^[6]. Data was found to be non-significant in days required for development of flower. Minimum days required for development of flower (14.60 days) was observed in Glorious Yellow it was at par with Everglades (16.40 days), Pinnacles (16.73 days), Bighorn (16.93 days), Atlanta (16.93 days), Pole Star (17.26 days), Honey Ball (17.46 days) and Diabolo (17.73 days). Maximum days required for development of flower (21.06 days) was recorded in Artist. It might be due to individual varietal character. This study was in accordance with the findings of Wankhede S. and Gajbhiye R.P. (2012) ^[9]. The maximum longevity of flower on plant (15.93 days) was calculated in Glorious Yellow followed by Pole Star (13.73 days), Honey Ball (13.53 days), Everglades (13.13 days), whereas minimum longevity of flower on plant (11.93 days) was calculated in Bighorn. This might be due to varietal characters. The result was in accordance with Wankhede S. and Gajbhiye R.P. (2012) ^[9].

Bighorn was recorded maximum total number of flower per plant (10.20) followed by Diabolo (8.13), Glorious Yellow (7.86), Artist (7.4), whereas minimum total number of flower per plant (4.86) was recorded in Atlanta. Variation in a number of flower per plant it might be due to individual varietal character. Similar type of observation reported by Wankhede S. and Gajbhiye R.P. (2012) ^[9].

Table 1: Performance of gerbera varieties on growth and quality parameters under shadenet

Treatments	Plant height (cm)	No. of leaves per plant	Leaf area (cm ²)	Flower diameter (cm)	Stalk length (cm)	Stalk girth (cm)	Vase Life (days)	Disc diameter (cm)
Honey Ball	40.4	21.43	82.01	8.12	41.10	0.55	8.93	2.18
Pinnacles	44.46	27.21	99.40	9.07	32.30	0.56	9.80	2.54
Fundy	36.29	29.54	135.97	8.10	33.32	0.58	8.86	2.93
Bighorn	43.15	25.43	80.92	8.50	36.78	0.60	10.13	2.66
Pole Star	41.04	30.16	93.32	10.5	41.71	0.65	8.06	3.62
Diabolo	37.15	23.47	156.12	9.51	41.17	0.53	9.66	4.05
Atlanta	33.21	18.17	77.38	8.38	40.28	0.52	9.26	2.62
Artist	34.96	22.31	97.19	8.97	42.88	0.57	8.86	2.27
Everglades	46.54	17.54	94.52	10.22	29.48	0.67	10.60	2.85
Glorious yellow	47.26	19.33	127.19	9.79	29.42	0.68	10.06	2.95
S.Em (±)	1.05	0.37	4.88	0.33	1.29	0.02	0.34	0.14
C.D. at 5%	3.59	1.28	16.65	1.13	4.40	0.07	1.17	0.48

Table 2: Performance of gerbera varieties on flowering and yield parameters under shadenet

Treatments	Days required for initiation of first bud (days)	Days required for first flower opening (days)	Days required for development of flower (days)	Life span of flower on plant (days)	Total number of flowers per plant
Honey Ball	59.93	9.93	17.46	13.53	6.13
Pinnacles	54.33	11.86	16.73	12.06	6.60
Fundy	55.86	11.06	18.80	12.66	6.26
Bighorn	54.06	14.80	16.93	11.93	10.20
Pole Star	53.73	15.00	17.26	13.73	6.86
Diabolo	54.33	8.26	17.73	12.46	8.13
Atlanta	57.80	12.73	16.93	12.33	4.86
Artist	49.26	10.86	21.06	13.06	7.40
Everglades	60.06	9.20	16.40	13.13	5.60
Glorious Yellow	62.33	10.26	14.60	15.93	7.86
S.Em (±)	1.03	0.84	1.12	0.64	0.57
C.D. at 5%	3.53	2.88	3.84	2.18	1.94

Conclusion

From the above results obtained from the experiment, it can be concluded that variety Glorious Yellow, Everglades, Pole Star and Diabolo emerged as the most promising varieties, exhibiting superior performance across multiple parameters including growth, flowering, quality and yield.

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