

Original Research Article

<https://doi.org/10.20546/ijcmas.2021.1009.044>

Evaluation of Different Gladiolus (*Gladiolus grandiflorus*) Cultivars in Terms of Spike Quality under Allahabad Agro Climatic Condition

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ABSTRACT

The present experiment was conducted during October 2011 – April 2012 in the Department of Horticulture, Sam Higginbottom Institute of Agriculture Technology and Science, Allahabad, (U.P.). The experiment of design was randomized block design consisting 11 treatment with 3 replication, with a view to find out the overall performance of different cultivars of Gladiolus viz. Panjab Morning (T₁), Green Bay (T₂), Noualux blue (T₃), American Beauty (T₄), Priscilla (T₅), White Prosperity (T₆) Red Majesty (T₇), Summer Shunshine (T₈) Delhi local (T₉), Noualux (T₁₀), Candyman (T₁₁). On the basis of different growth and yield parameters the maximum days for first floret durability (6.16). were recorded by White Prosperity (T₆) followed by American Beauty (T₄) (5.76). The maximum number of spike length (95.13cm) was obtained in White Prosperity (T₆) followed by Red Majesty (T₇) (94.16). The maximum weight of spike (64.40 g) was observed in White Prosperity (T₆) followed by American Beauty (T₄) (64.33g). The maximum floret diameter (12.63cm) was found in Summer Pearl (T₈) followed by White Prosperity (T₆) (12.53cm). The maximum number of floret per spike (18.00) was found in White Prosperity (T₆) followed by American Beauty (T₄) (17.73). The maximum number of spikes per plant (5.33) was observed in Delhi Local (T₉) followed by White Prosperity (T₆) (1.3). Which can be recommended for cultivation in Allahabad agro-climatic condition.

Keywords

Gladiolus,
Gladiolus grandiflorus,
growth and yield
parameters

Article Info

Accepted:
15 August 2021
Available Online:
10 September 2021

Introduction

Flowers are grown and admired by human beings wherever they live. In India, the various Horticultural activities includes flower

trade, bedding plant industry, plant rental services, floral perfumes, flower seeds and dry flower industry, etc. The changing lifestyle of Indians with a tendency to "say it with flowers" and celebration of festivals like

Valentines day, Christmas, Mother's day has created a tremendous demand of cut flowers like rose, carnation, gerbera, gladiolus, tuberosa. Gladiolus, belonging to sub family Ixioidae and family Iridaceae, is a glamorous ornamental bulbous plant of both beauty and perfection. The name Gladiolus, was originally coined by Pliny The Elder (A.D. 23-79) deriving from the Latin word gladius, meaning a sword on account of the sword like shape of its foliage. Gladiolus is commonly called sword Lily. Gladiolus is principally a native of South Africa and Europe.

There are about 226 recorded species of Gladiolus scattered in Natal of Good Hope in the Republic of South Africa. Certain species are also native of countries like Ethiopia, Rhodesia, Malawi, Macarena Islands, Mediterranean region, Italy, the Balkans, France, England, Middle East and Armenia and Caucasus region of U.S.S.R. The modern garden cultivars (numbering about 30,000) have been developed through natural and man-made crosses involving about 23 species (Arora *et al.*, 2002).

Keeping the above points in view, the present study entitled "Performance of different cultivars of gladiolus (*Gladiolus grandiflorus*) under Allahabad Agro-climatic conditions" was carried out in the Department of Horticulture, Allahabad School of Agriculture, Sam Higginbottom Institute of Agriculture, Technology and Science, Allahabad, in the year 2011 - 2012.

Materials and Methods

The present experiment was conducted during October 2011 – April 2012 in the Department of Horticulture, Sam Higginbottom Institute of Agriculture Technology and Science, Allahabad, (U.P.). The experiment of design was randomized block design consisting 11

treatment with 3 replication, with a view to find out the overall performance of different cultivars of Gladiolus viz. Panjab Morning (T₁), Green Bay (T₂), Noualux blue (T₃), American Beauty (T₄), Priscilla (T₅), White Prosperity (T₆) Red Majesty (T₇), Summer Shunshine (T₈) Delhi local (T₉), Noualux (T₁₀), Candyman (T₁₁) On the basis of different growth and yield parameters the maximum days for first floret durability were recorded by White Prosperity followed by American Beauty.

The maximum number of spike length was obtained in White Prosperity followed by Red Majesty. The maximum weight of spike was observed in White Prosperity followed by American Beauty. The maximum floret diameter was found in Summer Pearl followed by White Prosperity.

The maximum number of floret per spike was found in White Prosperity followed by American Beauty. The maximum number of spikes per plant was observed in Delhi Local followed by White Prosperity. The recorded data on the selected parameters were set for statistical analysis. The mean for collected data for each treatment was calculated.

Results and Discussion

First floret durability (Days)

The maximum days for first floret durability (6.16) was found in White Prosperity (T₆) followed by American Beauty (T₄) (5.76). While minimum days for first floret durability (3.73) was observed in Delhi Local (T₉).

Spike length (cm)

The maximum spike length (95.13cm) was obtained in White Prosperity (T₆) followed by Red Majesty (T₇) (94.16) minimum spike length (64.60) was obtained in Delhi Local

(T₉). These findings were in conformity with those of John *et al.*, (1996).

Weight of spike (g)

An analysis of the data clearly shows that maximum weight of spike (64.40 g) was observed in White Prosperity (T₆) followed by American Beauty (T₄) (64.33g). However minimum weight of spike (37.37g) was observed in Delhi Local (T₉).

Floret diameter (cm)

An analysis of the data clearly shows that maximum floret diameter (12.63cm) was found in Summer Pearl (T₈) followed by White Prosperity (T₆) (12.53cm) and minimum floret diameter (6.90) was found in Delhi Local (T₉).

Number of florets/spike

A study of the data reveals that maximum number of floret per spike (18.00) was found in White Prosperity (T₆) followed by American Beauty (T₄) (17.73) and minimum number of florets/spike (12.93) was found in Novalux (T₁₀). These findings were in conformity with those of Swain *et al.*, (2008).

Number of spikes/plant

An analysis of the data clearly shows that maximum number of spikes per plant (5.33) was observed in Delhi Local (T₉) followed by White Prosperity (T₆) (1.3). However minimum weight of spike (1.46) was observed in Green Bay (T₂). These findings were in conformity with those of Misra *et al.*, (1988).

The basis of the results obtained, it is concluded that out of 11 cultivars. The maximum days for first floret durability (6.16). The maximum spike length (95.13cm) was obtained in White Prosperity (T₆) followed by Red Majesty (T₇) (94.16) maximum weight of spike (64.40 g) was observed in White Prosperity (T₆).

The maximum floret diameter (12.63cm) was found in Summer Pearl (T₈) and minimum floret diameter (6.90) was found in Delhi Local (T₉). The maximum number of floret per spike (18.00) was found in White Prosperity (T₆) and minimum number of florets/spike (12.93) was found in Novalux (T₁₀). The maximum number of spikes per plant (5.33) was observed in Delhi Local (T₉) was observed in White Prosperity (T₆) (1.3). under Allahabad, agro-climatic condition.

Fig.1

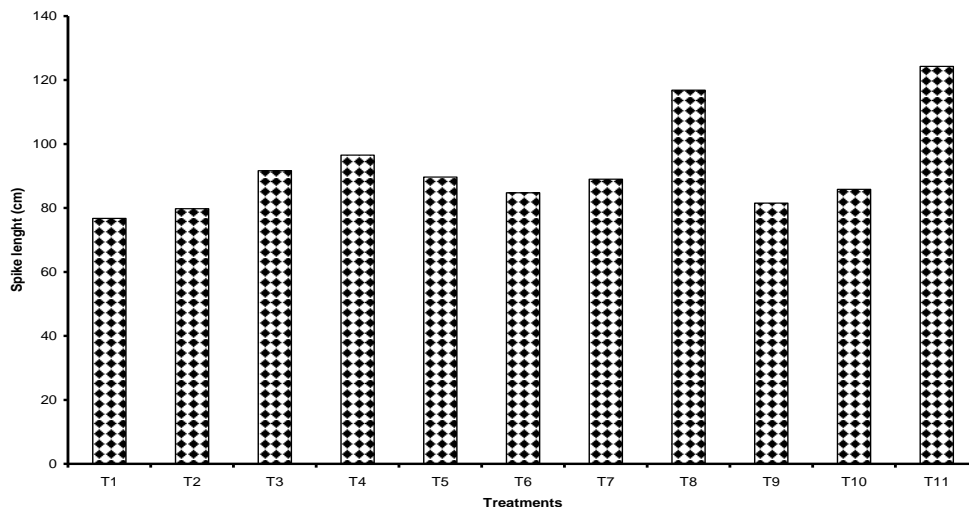


Fig. 4.7 : Spike length (cm) of different cultivars of Gladiolus.

Table.1 Performance of different cultivars of gladiolus on different parameters

Cultivars	First floret durability (Days)	Spike length (cm)	Weight of spike (g)	Floret diameter (cm)	Number of florets/spike	Number of spikes/plant
Punjab Morning	4.86	76.73	41.86	11.76	15.33	1.66
Green Bay	4.80	79.80	51.06	10.76	16.80	1.46
Novalux Blue	5.13	91.66	53.86	12.23	13.80	1.73
American Beauty	5.76	96.53	64.33	12.00	17.73	1.60
Pricilla	4.86	89.66	52.86	11.46	16.80	1.66
White Prosperity	6.16	84.73	64.40	12.53	18.00	1.93
Red Majesty	4.66	89.00	54.73	12.46	17.46	1.80
Summer Sunshine	5.20	116.86	53.33	12.63	17.53	1.63
Delhi Local	3.73	81.53	37.37	6.90	13.06	5.33
Novalux	4.80	85.86	57.00	12.50	12.93	1.80
Candy man	4.80	124.26	58.40	12.53	17.26	1.53
SE	0.447	4.319	4.735	0.447	1.272	0.382
CD	0.933	9.011	9.879	0.934	2.655	0.798

Fig.2

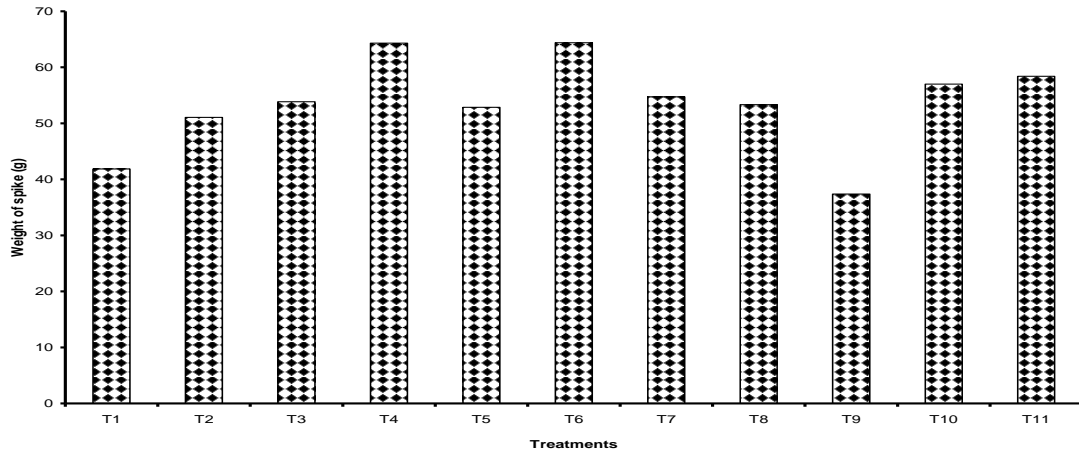


Fig. 4.8: Weight of spike (g) of different cultivars of Gladiolus.

Fig.3

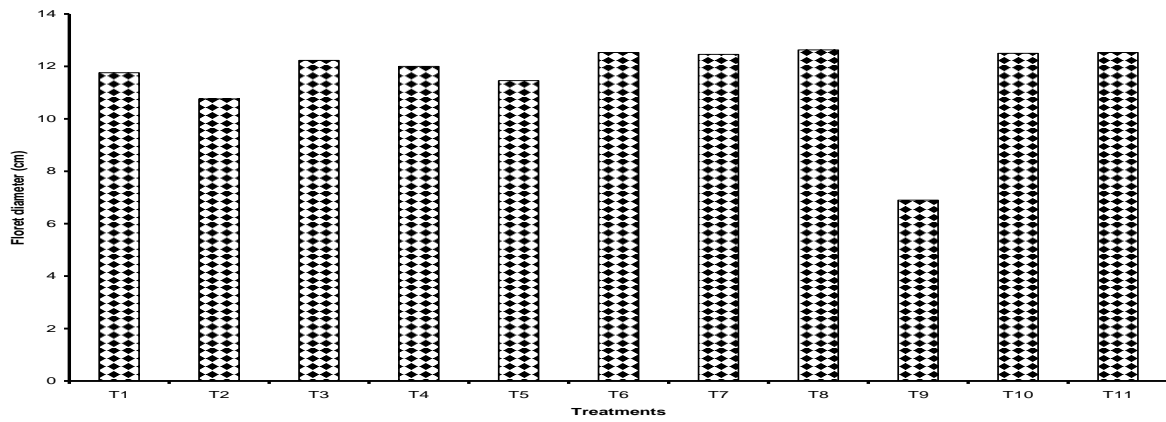


Fig. 4.10: Floret diameter (cm) of different cultivars of Gladiolus.

Fig.4

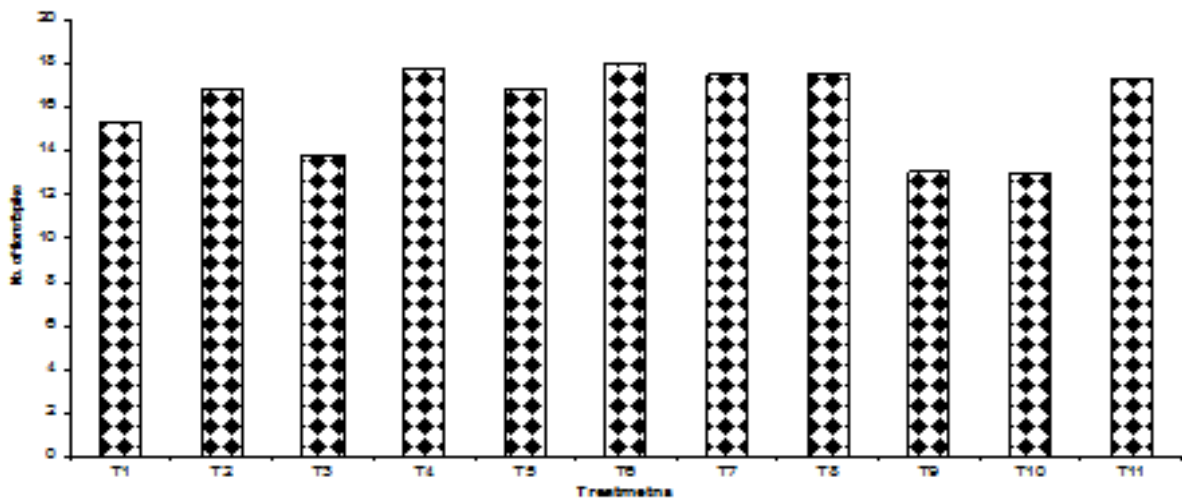


Fig. 4.9: Number of florets/ spike of different cultivars of Gladiolus.

Fig.5

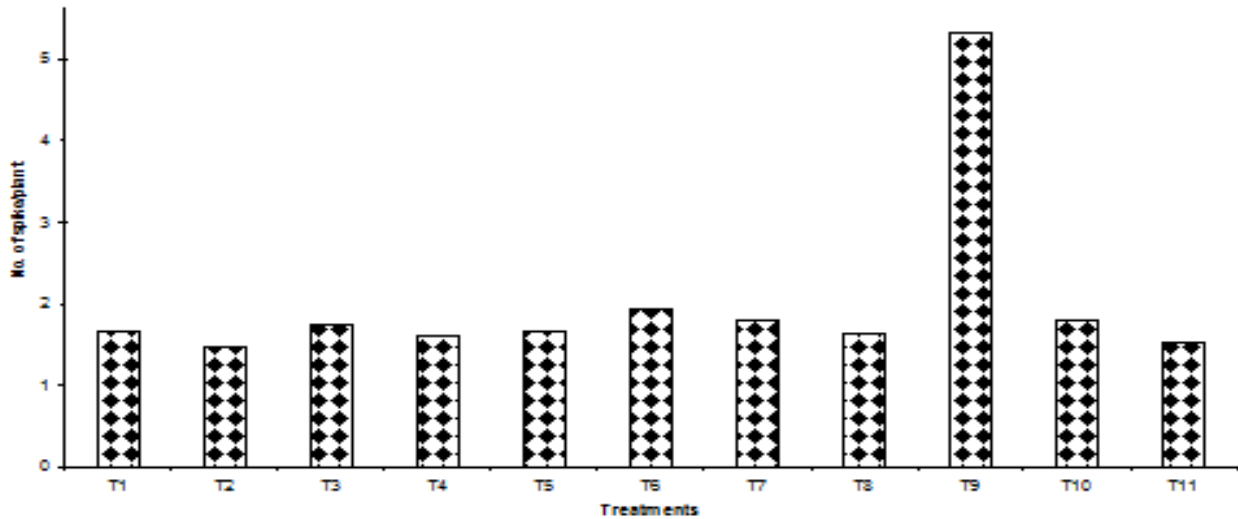


Fig. 4. 11: Number of spike/plant of different cultivars of Gladiolus.

References

- Dalal, S. R. Paithankar, D. N. Anokar, D. N. Lande, S. S. (2006). Response of gladiolus varieties to different planting dates under Akola conditions. *Annals of Plant Physiology*. 20: 1,137-138.
- Jhon, A. Q.; Bichoo, G. A. and Siddique, M. A. (1996). Performance of gladiolus cultivars in Kashmir. *Flora and Fauna, Jhansi*, 2 (1): 75 -77.
- Pragya Ranjan, J. K. Attri, B. L. Das, B. Hare Krishna Ahmed, N.(2010). Performance of gladiolus genotypes for cut flower and corm production under high altitude of Uttarakhand. *Ind. J. of Hort.* 67: Special Issue, 386-390.
- Swain, S. C. Rath, S. Sethi, B. K. (2008). Evaluation of gladiolus cultivars for quality flowers and corm yield under Eastern Ghat high land zone of Orissa. *Ori. J. of Hort.*, 36:1,120-123.
- Mollah, M. S. Khan, F. N. and Amin, M. M (2002). *Gladiolus*. Landscape, Ornamental and floriculture division. HRC, BARI, Gazipur, Bangladesh. pp.13-14.
- Arora, J. S.; Misra, R. L.; Singh, K.; Singh, P. and Bhattacharjee, S. K. (2002). *Gladiolus*. *Technical Bulletin*, No. 14, PP 1-3. All India Coordinated Research Project on Floriculture. Division of Floriculture and Landscaping, Ind. Agric. Res. Inst., New Delhi.
- Misra, R. L. and Saini, H. C. (1988). Genotypic and phenotypic variability in gladiolus. *Ind. J. of Hort.*, 45 (1-2): 148-152.
- Pandey, R. K. Sheetal Dogra Sharma, J. P. Shivani Jamwal (2009). Performance of gladiolus cultivars under Jammu conditions. *J. of Plant Sci. Res.* 25: 1, 115-117. 10.
- Shiramagond, M. S. and Hanamashetti, S. I. (1999). Evaluation of varieties of gladiolus under Ghataprabha Commaitd Area. *Karnataka J. of Agril. Scie.* 12 (1- 4): 159 -163.
- Cantor *et al.*, (2000) Studies in Romania and France to compare 26 gladiolus cultivars. Data are presented on colour, flowering date, plant height, length of

- flower stem number and size of flowers, reproduction capacity and aesthetic value.
- Solanki, N. S. Kumar, M.Singh, D. (2019) Studies on morphological characters of gladiolus cultivars under Allahabad agroclimatic conditions J. of Pharmacognosy and Photochemistry SP 5; 115-119.
- Jagdish, Solanki, N. S. Kumar, M. (2018) Performance of different cultivars of gladiolus under allahabad agro-climatic conditions J. of Pharmacognosy and Phytochemistry SP 4; 27-29.

How to cite this article:

Narendra Singh Solanki, Parmanand Sen, Lal Singh and Ramshankar Pawak. 2021. Evaluation of Different Gladiolus (*Gladiolus grandiflorus*) Cultivars in Terms of Spike Quality Under Allahabad Agro Climatic Condition. *Int.J.Curr.Microbiol.App.Sci.* 10(09): 384-390.
doi: <https://doi.org/10.20546/ijcmas.2021.1009.044>