

Evaluation of Tropical Gladiolus under Eastern Plateau and Hill Region of India

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Abstract: Five tropical gladiolus varieties viz., American Beauty, Jacksonville Gold, Jessica, Red Beauty and Sindoor were evaluated during 2004-2005 in ICAR Research Complex for Eastern Region, Research Centre, Ranchi. The varieties 'Jacksonville Gold' had highest corm weight (15.96 gm) which was at par with American Beauty (15.04g). The maximum spike length was found (69.00 cm) in variety Jessica. The highest numbers of florets were found in 'Jessica' (14.66). The variety Red Beauty recorded highest floret area of 122.33 sq cm. The variety Jacksonville Gold accounted for maximum germination per cent (99.8%) and yield. The maximum number of cormels produced by the cultivar Sindoor (12.48) which was at par with Red Beauty (12.12). Hence, from the production point of view, Jacksonville Gold was promising under Eastern plateau and Hill region.

Keywords: Tropical gladiolus, flowering per cent, spike length, cormels.

1. Introduction

Gladiolus (*Gladiolus X hortulanus*), the queen of bulb, is one of the most important bulbous plants cultivated in Jharkhand for the gardens for its beautiful flower spikes and cut flowers. Gladiolus was characterized by flowers with brilliant colours, attractive shapes, varying sizes, excellent keeping quality. In various agro-climatic regions different types of gladiolus are grown in local as well as international use. The gladiolus is ideal both for garden and floral decoration. The florets open in sequence over a longer duration and hence have a good keeping quality of cut spike. It is ideal as a cut flower, very good for beds, herbaceous border, for making bouquets and does well in pots. The performance of any variety largely depends on genotypic and environmental interaction. As a result different agro-climatic condition plays a key role for performance of the variety. The atmospheric condition of spring and summer rather mild in nature under eastern plateau and hill region opted for testing of tropical gladiolus varieties. Therefore an attempt has been made to evaluate performance of tropical gladiolus varieties and recommended suitable cultivar under plateau and hill region.

2. Materials and Methods

The experiment was conducted at ICAR Research Complex for Eastern Region, Research Centre, and Ranchi during 2003 and 2004. This area is situated 620 m above mean sea level (msl) and at 23° 25' N latitude and 85° 20' East longitude experiencing an average annual rainfall of 110-140 cm. Soil is acidic and pH range from 5.0-6.5, which is ideal for gladiolus cultivation. The varieties under study were (T1) American Beauty, (T2) Jacksonville Gold, (T3) Jessica, (T4) Red Beauty and (T5) Sindoor. Planting was done during last week of January at a planting distance of 15 cm X 15 cm and 5 cm soil depth. The experiment was laid out in a randomized block design with four replications. Data were taken on corm and flowering characters and post harvest life in room temperature and ANOVA were analyzed statistically.

3. Results and Discussion

Two years pooled data indicated that the variety Jessica was earliest and took 81.33 days for flowering while the variety Sindoor was late bearer (Table-1). We took first harvest as Jessica at second week of April. This variety was so adapted to our farm that April heat wave had nothing to do even in its post harvest life. The variety Jacksonville Gold had maximum flowering per cent (commercial cut flower). The variety Jessica accounted for the maximum spike length (69.00cm) and number of florets in a spike (14.66). The variety Red Beauty exhibited the maximum floret size (122.33cm²) and post harvest life (4 days in ambient temperature). The maximum germination per cent (100.0) and corm weight (15.46g) were observed in variety Jacksonville Gold (Table-2). The corm height of variety Red Beauty and American Beauty were less as compared to their diameter and they were flat shaped. But varieties Jessica and Jacksonville Gold were round to oval in shape. As the variety Sindoor was of local origin it suitably adapted it produced even multiple spike from the corm and also produced maximum cormels (12.48) followed by Red Beauty (12.12). The data ranges varied regarding corm and spike characters were similar as mentioned by (Uppal and Arora (1994), Aswath and Parthasarathy 1996), Kumar and Yadav (2005). The data of present investigation were in conformity with different gladiolus varieties grown in Jharkhand at winter Horo *et. al.*; 2009). Hence, from the present experiment, it can be concluded that Jacksonville Gold is the most promising variety under Plateau condition of Eastern India.

References

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Table 1: Performance of tropical gladiolus varieties according to spike characters

Variety	Days taken for flowering	Flowering % (commercial)	Spike weight (g)	Spike length (cm)	No. of florets	Floret size (cm ²)	Post-harvest life (days)
Red Beauty	110.25	80.33	41	57.66	8	122.3	4.00
Jessica	81.33	85.66	45	69	14.66	80	3.66
American Beauty	85.29	82.33	48	68.33	12	47.33	3.33
Jackson Ville Gold	92.14	99.83	51.33	67.33	11	87.33	3.66
Sindoor	112.66	78.14	50.22	55.33	10.44	92.33	3
C.D.at 5%	3.24	13.04	ns	0.43	4.07	18.8	0.052

Table 2: Produced corm characters of different varieties of gladiolus

Variety	Colour of corm	Germination per cent	Corm weight (g)	Corm height (cm)	Corm breadth (cm)	Number of cormels produced
Red Beauty	Red	85.12	10.43	18.26	28.33	12.12
Jessica	Yellowish Red	91.33	12.46	24.42	27.48	6.76
American Beauty	Reddish Yellow	89.74	15.04	18.8	31.2	10.83
Jackson Ville Gold	Whitish Yellow	100	15.96	22.29	30.57	7.62
Sindoor	Lightly Reddish	83.44	11.53	23.18	25.39	12.48
C.D. at 5%	-----	3.72	0.987	2.84	1.82	1.52