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Evaluation of gladiolus cultivars under the Northern Telangana zone

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ABSTRACT : An experiment was conducted to assess the performance of gladiolus cultivars at the Horticultural Research Station, Adilabad which comes under the Northern Telangana Zone. Among the 13 cultivars tested, 'Eurovision' has recorded significantly early flowering (55 days) when compared with all other cultivars. However, the plant height (59.63 cm), spike length and number of florets per spike (12) in the 'Eurovision' cultivar were significantly lowest when compared with all other cultivars. The cultivar 'Snow White' has recorded significantly longer duration of flowering (8.67days), whereas 'Meera', 'Friendship' and 'Shobha' were at par with 'Snow White'. 'American Beauty' has recorded significantly maximum vase life (9.00 days).

KEY WORDS : Gladiolus, Cultivar, Spike length, Flowering duration, Vase life

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Gladiolus has a prominent place among the bulbous flowers grown all over the world. In India, gladiolus is generally cultivated during the winter season under open conditions. The flower stalks are available in different colours and combinations. The unique nature of florets arrangement and opening on the spike are very spectacular. All these special attributes have imparted beauty and elegance to the gladiolus flowers, thus occupied a prominent place in the commercial market. The flower stalks are used in the floral arrangements and flower decorations. However, it's cultivation in South India was confined only to certain limited pockets of the area. Further, the performance of gladiolus cultivars was different under different agro-climatic conditions as reported by several authors (Ram *et al.*, 2005; Swaroop *et al.*, 2005; Neeraj *et al.*, 2000 and Arora and Khanna, 1985). Keeping all these findings in view the present investigation was planned to assess the performance of different gladiolus cultivars during the cool winter season under the Northern Telangana

Zone conditions of Deccan Plateau.

RESEARCH METHODS

The present investigation was carried out during the period 2002-04, at the Horticultural Research Station, Adilabad which comes under the Northern Telangana Zone. In the present investigation, thirteen cultivars of exotic and indigenous origin *viz.*, T₁: Eurovision, T₂: Watermelon Pink, T₃: Jester, T₄: Oscar, T₅: Arka Rekha, T₆: American Beauty, T₇: Beauty Spot, T₈: Meera, T₉: Snow White, T₁₀: Friendship, T₁₁: Shobha, T₁₂: Yellow Mix, T₁₃: Poonam, have been employed to test their efficacy and suitability to the Northern Telangana conditions. The experiment was laid out in a Randomized Block Design with thirteen cultivars and three replications. The plot size was 2.5 m x 2.5 m and the plants were spaced at 30 cm x 20 cm. Corms of uniform size were used for planting. Planting was done during the first week of October, every year at a depth of 5-7 cm. The observations on plant height, number of leaves

per plant, number of days to flower, spike length, number of florets per spike, flowering duration and vase life were recorded. The data collected from two seasons were pooled together and analyzed statistically by adopting the procedure outlined by Panse and Sukatme (1985).

RESEARCH FINDINGS AND DISCUSSION

Significant variation was observed among the cultivars for both vegetative and floral characters (Table 1). The variety 'Friendship' produced the tallest (107.30cm) plants, followed by 'Snow White' (107.27cm), where as 'Eurovision' has produced shortest (59.63cm) plants in height.

The cultivar 'Snow White' has produced maximum number of leaves (8.67) per plant, where as 'Arka Rekha' produced minimum number of leaves (6.33) per plant followed by 'American Beauty' (6.67). The number of leaves produced by the remaining all other cultivars were at par with 'Snow White' cultivar. The number of leaves produced per plant is generally dependent on the food reserves present in the corm as explained by Sharma and Gupta (2003), which is in close conformity to the present results.

Cultivar 'Eurovision' has taken significantly lowest number of days (55) for flowering followed by 'Friendship' (68.33 days). However, cultivar 'Snow White' has taken significantly higher number of days (102.00) to flower when compared with all other

cultivars. 'Meera' and 'Oscar' were at par with 'Snow White'. From the data it is evident that time taken for flowering varied significantly among the cultivars. The dark coloured varieties have taken maximum number of days for flowering than the light coloured varieties.

Spike length showed significant variation among the cultivars. Cultivar 'Snow White' recorded significantly longest spikes (91.17 cm) followed by 'Oscar' (89.83 cm), where as 'Eurovision' recorded significantly shortest (50.33 cm) spike length. Cultivars 'Friendship' (87.33 cm) and 'Shobha' (85.67 cm) produced longer spikes. Except the cultivars 'Eurovision', 'Arka Rekha' and 'American Beauty' the spike length of remaining all other cultivars was according to the standard spike length as explained by Swaroop *et al.* (2005).

Cultivar 'Snow White' and 'Meera' have produced significantly maximum number of florets per spike (16.00), whereas 'Eurovision' has produced significantly lowest number of florets per spike (12.00). 'Beauty Spot' and 'Yellow Mix' were at par with 'Eurovision'. Late flowering cultivars produced maximum number of florets per spike than the early cultivars.

Significant variation was observed among the cultivars for flowering duration. Cultivar 'Snow White' has recorded significantly longer duration of flowering (8.67 days) followed by 'Meera' (8.00 days), where as 'Eurovision' and 'Beauty Spot' have recorded significantly shorter duration of flowering (6.33 days).

Table 1 : Performance evaluation of gladiolus cultivars for vegetative growth and flower yield parameters under Northern Telangana conditions							
Cultivars	Plant height (cm)	No. of leaves/ plant	No. of days to flower	Spike length (cm)	No. of florets/ spike	Flowering duration (days)	Vase life (days)
Eurovision	59.63	7.00	55.00	50.33	12.00	6.33	7.33
Watermelon pink	90.20	7.67	86.67	80.83	13.33	7.00	7.00
Jester	80.17	7.67	89.67	71.33	14.00	7.00	7.00
Oscar	97.17	7.67	96.33	89.83	14.00	7.00	7.00
Arka Rekha	76.63	6.33	73.33	65.83	13.33	7.00	8.00
American beauty	75.63	6.67	79.67	66.67	14.67	7.33	9.00
Beauty spot	82.17	7.00	81.33	69.83	12.67	6.33	7.33
Meera	95.60	8.00	98.67	80.67	16.00	8.00	8.33
Snow white	107.27	8.67	102.00	91.17	16.00	8.67	8.33
Friendship	107.30	7.67	68.33	87.33	15.33	7.67	8.67
Shobha	98.83	8.00	93.00	85.67	14.67	7.33	7.67
Yellow mix	91.93	7.00	76.67	79.17	12.67	6.67	7.33
Poonam	95.17	7.67	89.00	79.83	13.33	6.67	8.67
Mean	89.05	7.46	83.82	76.81	14.00	7.15	7.82
S.E.±	3.20	0.59	2.47	1.30	1.09	0.51	0.50
C.D. (P=0.05)	9.34	1.74	7.20	3.79	3.17	1.50	1.45

'American Beauty' has recorded significantly higher vase life period (9.00 days) followed by 'Friendship' and 'Poonam' (8.67 days) cultivars, whereas 'Watermelon Pink', 'Jester' and 'Oscar' have recorded significantly lower (7.00 days) vase life period. 'American Beauty', 'Friendship' and 'Poonam' varieties may be considered for making bouquets and floral arrangements as they have good keeping quality.

A cultivar suitable for a particular climate can be assessed based on the morphological and reproductive characters. Based on the results obtained from the present investigation it has indicated that there was a considerable variation among the cultivars for both morphological as well as reproductive parameters. Finally, it may be concluded that cultivar 'Eurovision' which was dwarf in height and short in spike length, but early in flowering and excellent arrangement of florets on the rachis may be considered as the best suitable variety under the Northern Telangana Zone conditions in the Deccan Plateau.

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