

Comparative performance of gerbera cultivars (*Gerbera jamisonii* Bolus ex hooker F.) under protected environment conditions

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ABSTRACT

An investigation was carried out to evaluate the five cultivars of gerbera (*Gerbera jamisonii*) (Dhoni, Zingaro, Roselin, Dune and Balance) under fan and pad cooled greenhouse conditions at the Horticulture Research Farm, Anand Agricultural University, Anand, Gujarat, during 2008- 09. The significantly maximum flower stalk length (62.95 cm), flower stalk diameter (5.09 cm), flower diameter (11.41 cm), flower fresh weight (14.37 g), flower dry weight (2.51 g), number of flowers per plant (10.59), number of flowers per sq. m (94.04) and number of suckers per plant (4.88) were recorded in cv. BALANCE as compare to other cultivars.

Key words : Gerbera, Evaluation, Fan and pad cooled greenhouse (Protected conditions)

INTRODUCTION

Gerbera (*Gerbera jamisonii* Bolus ex hooker F.) commonly known as Transvaal Daisy, Barberton Daisy or African Daisy belong to family Asteraceae, is an important cut flower having single, semi – double and double types of flowers. It is highly suitable for beds, borders, pots and rock gardens. The cut blooms have long shelf life. As the commercial cultivation of cut flowers have a good potential, introduction and popularisation of high yielding cultivars of gerbera gain importance. Production of high quality and more yield of gerbera mainly depend on the selection of proper varieties. As these varieties are recently introduces and their performance is not studied systematically under protected conditions. Keeping this in view, five cultivars of gerbera were evaluated to identify the best performance for growth, yield and quality grown under fan and pad cooled green house.

MATERIALS AND METHODS

An experiment was carried out to evaluate five cultivars of gerbera at the Horticulture Research Farm, Anand Agricultural University Anand, Gujarat, during August, 2008 to February, 2009 to evaluate the gerbera cultivars under fan and pad cooled green house. Temperature and relative humidity were maintained throughout the experiment, 23°C - 25°C and 80 – 85%, respectively under fan and pad cooled greenhouse. Five cultivars viz., Dhoni, Zingaro, Roselin, Dune and Balance were selected for this study. Healthy tissue cultured plants were planted in raised beds of 45 cm height, 75 cm base and 60 cm top in two rows at spacing of 30.0 cm × 37.5 cm on 30th August, 2008. The experiment was laid out in completely randomized design with eight replications. Five

plants from each replication of a cultivar were used for recording observation. The recommended package of practices were followed for raising the successful crop. Data on growth, flower quality and yield characters were recorded up to six months after one month of transplanting. All the mean values of the recorded data on various biometrical parameters were subjected to stastically analysis as per the procedure given by Panse and Sukhatme (1985) and tabulated in Tables.

RESULTS AND DISCUSSION

The data on flowering attributes (flower stalk length, flower stalk diameter, flower diameter, flower fresh weight, flower dry weight) and yield (number of flowers per plant, number of flowers per sqm. and number of suckers per plant) presented in Table 1. The flower stalk length is very important qualitative characters for gerbera cut flowers. The significant differences were observed among the different cultivars for stalk length. The longest flower stalk (62.95 cm) was observed in cv. BALANCE, whereas minimum (53.00 cm) was observed in cv. DHONI. The findings are in accordance with the result reported by Pareneetha (2006), Singh and Ramchandran (2002) and Naik *et al.* (2006). These differences might be due to inherent characters of stalk development for the individual cultivars. The maximum flower stalk diameter (5.09 cm) was recorded in cv. BALANCE, which was found significantly superior over other varieties and minimum stalk diameter (4.04 cm) recorded in cv. ZINGARO. Maximum flower diameter (11.41 cm) was recorded in cv. BALANCE and minimum (9.53 cm) observed in cv. ZINGARO. The findings are in accordance of Singh and Sangama (2005). Maximum flower fresh weight (14.37 g) was found in cv. BALANCE and minimum (8.11 g) was

Table 1 : Varietal influence of gerbera cultivars on certain floral characters and yield under protected environment conditions

Cultivars	Flower stalk length (cm)	Flower stalk diameter (cm)	Flower diameter (cm)	Flower fresh weight (g)	Flower dry weight (g)	Number of flowers/plant	Number of flowers/sq. m	Number of suckers/plant	Flower colour
Dhoni	53.00	4.22	10.50	10.54	1.92	3.77	33.47	2.54	Yellow
Zingaro	58.97	4.04	9.53	8.11	1.40	8.37	74.32	3.95	Red
Roselin	56.92	4.09	10.77	13.37	2.12	4.54	40.31	3.11	Pink
Dune	59.49	4.23	9.78	11.77	1.30	6.74	59.85	3.14	Saffron
Balance	62.95	5.09	11.41	14.37	2.51	10.59	94.04	4.88	White
C. D. (P =0.05)	2.00	0.18	0.37	0.79	0.11	0.29	-	0.11	-

observed in cv. Zingaro. Flower dry weight was found maximum (2.51 g) in cv. BALANCE, whereas minimum (1.30 g) recorded in cv. DUNE.

Flower yield decides the significance of the particular genotypes, which are suitable for commercial cultivation. In the present investigation cv. Balance produce significant maximum number of flowers per plant (10.59) and per sq. m. (94.04) and remained superior over rest of the cvs. studied, whereas Dhoni recorded minimum number of flowers (3.77 per plant and 33.47 per sqm.). The increased in flower yield might be attributed to the more number of leaves per plant as well as greater leaf area development would have resulted in production and accumulation of maximum photosynthates resulted in production of more number of flowers with bigger size. The results are in accordance with the findings of Bhayani *et al.* (2005). Number of suckers production per plant was recorded significantly the highest (4.88) in cv. BALANCE, while minimum (3.95) was found in cv. ZINGARO.

The variation in yield and growth attributes among gerbera cultivars can be attributed to the genetic factors. It can be concluded that cv. BALANCE was found to be superior in flower attributes and flower yield therefore, recommended for cut flower production under protected conditions.

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