

# Performance of Gerbera (*Gerbera jamesonii*) under naturally ventilated polyhouse condition

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## SUMMARY

The study was carried out to evaluate the performance of 28 genotypes of gerbera at the Hi-tech Floriculture and Vegetable Improvement Project, College of Agriculture, Pune during 10<sup>th</sup> January, 2007 to 10<sup>th</sup> January, 2008. The observations in respect of growth and yield characters were recorded. The varieties were tested qualitatively with regards to flower colour, flower grade and vase life in tap water. The varieties Esmara, Lomboegine, Sonata, Verginia and Devil produced higher number of suckers indicating their capacity to give higher sucker yield. The varieties Martinque, Banesa, Esmara, Devil, Verginia, Gucci and Opium observed with large flower diameter and flower stalk length while, the varieties Solem, Pink snow, Opium and Maidemoselli produced highest stalk thickness were best suited for cut flower production. The varieties Banesa, Esmara, Opium and Grizzly had more vase life in tap water. The high yielding varieties Sonata, Esmara, Opium, Solem, Gucci, Diana, Naome, Martinque, and Maidemoselli were useful for obtaining higher returns under naturally ventilated polyhouse. During investigation Sonata, Esmara, Opium, Solem, Devil, Banesa, Verginia, Naome, Diana, Martinque and Maidemoselli were superior over the rest of the varieties under study in terms of flower quality and flower yield and can be recommended for commercial cultivation under naturally ventilated polyhouse conditions.

**Key words :** Gerbera, Performance, Polyhouse

**G**erbera is an important flower crop cultivated throughout the world and grown over an area of 98.40 ha. Producing 1,476 lakh stems annually in Maharashtra (Anonymous, 2007). A large number of gerbera cultivars are available to suit the requirement of the growers. However, selection for commercial cultivation should be made considering several factors, particularly on the basis of their performance and market demand. Exportable or superior quality cut blooms of gerbera for domestic as well as distant market are not produced easily under open field condition.

*Gerbera jamesonii* is commonly known as Transvaal, African or Barberton Daisy. The genus Gerbera was named in honour of the German naturalist Traugott Gerber and the species jamesonii in honour of Captain Jamson (Das *et al.*, 1989).

The present investigation was, therefore planned and undertaken under naturally ventilated polyhouse

conditions, to record the standardised description of some of the important exotic gerbera cultivars and to determine the outstanding gerbera cultivars for commercial cultivation under naturally ventilated polyhouse conditions.

## MATERIALS AND METHODS

The experiment was undertaken at Hi-tech Floriculture and Vegetable Improvement Project, College of Agriculture, Pune in Completely Randomised Design replicated thrice with twenty eight gerbera varieties and 5 plants as a unit under naturally ventilated polyhouse conditions during 10<sup>th</sup> January, 2007 to 10<sup>th</sup> January, 2008. Eight week old tissue cultured plantlets of twenty eight gerbera genotypes were procured from different private Ltd. Companies.

The plantlets were planted at spacing 25x25 cm in pots using coco peat as growing media. Cultural practices like fertigation and plant protection were carried out as per standard recommendations and kept common for all treatments. The observations on growth and quality parameters were recorded in each replication per treatment.

## RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been presented under following heads :

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**Growth parameter:**

Significant variation was observed among different genotypes, (Table 1) the variety Esmara (70.49 cm) produced significantly maximum plant spread, where as minimum plant spread was recorded in Popov (49.23 cm). The result was supported to the findings of Nirmal (2004) in gerbera varieties.

Significantly more number of leaves per plant was recorded in Sonata (65.27), where as less number of leaves was recorded in genotype Popov (41.47), Bhattcharjee (1981), Nirmal (2004) recorded similar observations in gerbera varieties.

Significantly maximum leaf area was recorded in Sonata (372.56 cm<sup>2</sup>), while the genotype Popov (189.85 cm<sup>2</sup>) recorded minimum leaf area.

The genotype Gucci (8.67) had significantly produced maximum number of suckers per plant, where as the genotype Crossraid (4.73) recorded less number of suckers per plant. The marked variation in vegetative growth parameters may be due to varietal characters. Praneetha *et al.* (2002) and Patil (2001) recorded similar type of observations in gerbera varieties.

**Flower quality:**

The genotype Ondine (51.10 days) required minimum days for first flowering, while the genotype Popov required maximum number of days for first flowering. Similar variation in days to first flowering reported by Ambad *et al.* (2001) and Nair and Medhi (2002).

As regards the flower diameter, the genotype Martinque (13.43 cm) produced the flowers with larger diameter, while the genotype Sonata (8.29 cm) produced the flowers with smaller diameter. Patil (2001) and Nirmal (2004) recorded similar observations in gerbera varieties.

Banesa (65.50 cm) recorded flowers with

significantly more stalk length, while the genotype Onedine (52.80 cm) recorded flowers with significantly lower stalk length. These results are in accordance with those reported by Patil (2001) and Patil *et al.* (2002), Singh and Mandhar (2002).

The variety Solem (0.76 cm) produced flowers with significantly highest stalk thickness, while genotypes Sonata, Devil and Esmara produced flowers with lowest stalk thickness (0.56 cm). These results are similar to those reported by Kandpal *et al.* (2003), Nirmal (2004) and Patil *et al.* (2002).

The maximum number of ray florets per flower was observed in genotype Woman (326.67), while the genotype Lomboegine (153.93) produced minimum number of ray florets per flower.

**Flower, yield and quality:**

The data revealed that significantly maximum flower yield per plant (41.47) was produced by cultivar Sonata followed by Esmara, Opium and Solem, while the least number of flowers per plant was obtained under cultivar Popov (26.07). Such variation in flower yield was reported in gerbera by Deepak Kumar and Ramesh Kumar (2002). As regards to vase life, Banesa has recorded significant maximum vase life (15.37 days) followed by Esmara, Grizzly, Opium and minimum in cultivar Naome. Considering all the growth and flowering characters of exotic gerbera cultivars lead us to conclude that the varieties Sonata, Esmara, Opium, Solem, Devil, Banesa, Verginia, Naome, Diana, Martinque and Maidemoselli can be regarded as superior to the rest of the varieties under study. The outstanding characters of the suitable cultivars can also be explored in breeding programme for developing better gerbera hybrids.

**REFERENCES**

- Anonymous, (2007). Floriculture at Glance. Government of Maharashtra, Department of Agriculture, Maharashtra State Horticulture and Medicinal plants Board.
- Ambad, S.N., Banker, M.C., Mulla, A.L., Thakor, N.J. and Takate, R.L. (2001). A new, low cost polyhouse technique of gerbera. *Indian J. Hort.*, **45**:16-17.
- Bhattacharjee, S.K. (1981). Studies on the performance of different *Gerbera jamesoni* hybrida under Bangalore conditions. *Lal Baugh*, **26**(1):26-40
- Das, P., Singh, P.K. and Samanta.(1989). *Gerbera in Commercial Flowers* by Bose T.K. and L.P.Yadav, Naya Prakash, Calcutta, pp: 601-618.
- Deepak Kumar and Ramesh Kumar. (2000). Seasonal response on gerbera cultivars. *J. Ornamental Hort.* New series, **3**(2): 103-106.
- Kandpal, K., Santosh Kumar, Srivastava, R. and Ram Chandra (2003). Evaluation of Gerbera cultivars under tarai conditions. *J. Ornamental Hort.*, **6** (3):252-255.
- Nair, S.A. and Medhi, R.P. (2002). Performance of gerbera cultivars in the Bay Island. *Indian J.Hort.*, **59**(3):322-325.
- Nirmal, P.G. (2004). Performance of gerbera (*Gerbera jamesonii*) cultivars in terms of quantity and quality as a second year crop under polyhouse. M.Sc.(Ag.). Thesis Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra.

- Patil, S.B., Dumbre Patil, S.S., Gaikwad, A.M. (2002). Evaluation of Gerbera varieties under polyhouse. pp: 315-317.
- Patil S.J. (2001). Performance of gerbera (*Gerbera jamesonii*) varieties under polyhouse conditions. M.Sc (Ag.) Thesis, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra.
- Praneetha, S., Jawahrlal, M. and Vinaykumar, M. (2002). Performance of gerberas under Yeracaud conditions. Floriculture Research trend in India. Proceeding of National Symposium on Indian Floriculture in the New Millennium. Lalbaugh, Bangalore, 25-27 February, 2002, pp: 323.
- Singh, K.P. and Mandhar, S.C. (2002). Performance of Gerbera (*Gerbera jamesonii*) cultivars under fan pad cooled green house Environments. *J. Appl. Hort.*, **4** (1):56-59

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