



Studies on genetic variability and heritability in gerbera

R.R. CHOBE, P.B. PACHANKAR AND S.D. WARADE

See end of the article for authors' affiliations

Correspondence to :

P.B. PACHANKAR
A.I.C.R.P. on Potato,
National Agricultural
Research Project,
Ganeshkhind, PUNE (M.S.)
INDIA
Email:
pachankapb@gmail.com

ABSTRACT

Study was carried out for 30 genotypes of gerbera to evaluate variability, heritability and genetic advance for 11 characters during Jan 2008- Jan 2009. Appreciable amount of variability was observed among the genotypes for all the characters under study. GCV and PCV was observed highest for number of ray florets flower⁻¹ (37.88 and 41.18, respectively), followed by leaf area. Genotypic coefficient for other characters ranged from 2.57 (flower stalk length) to 16.27 (vase life). Heritability ranged between 11.72 per cent to 89.79 per cent for flower diameter and leaf area, respectively. Genetic advance was highest for number of ray florets flower⁻¹ (169.90) followed by leaf area (75.89).

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Gerbera (*Gerbera jamesonii*) is a sensitive crop considerably influenced by climatic conditions. In Maharashtra it is widely cultivated in western part of M.S. particularly in Pune, Satara, Nasik and Sangli districts. Climatic conditions are highly variable and hence the introduced varieties vary in performance. It is essential to develop varieties specifically suited to this region. For sound breeding programme, knowledge of the magnitude of genetic variability and heritability is essential therefore, present study was carried out to assess genetic variability and heritability of 30 exotic genotypes of gerbera.

MATERIALS AND METHODS

The study was undertaken during Jan. 2008 – Jan. 2009 at the Hi-tech floriculture and Vegetable Improvement Project, College of Agriculture, Pune. Thirty exotic genotypes procured from M/s Kumar florist Bioplants Pvt. Ltd. M/s Gemini Agrovet and Spic Floriculture Pvt. Ltd. all are from Pune, were used in present study. The experiment was laid out in a Completely Randomized Design with three replications. Observations were recorded on five selected plants from each genotype in each replication during second year for number of leaves plant⁻¹, plant spread (cm), leaf area (cm²), number of days required for first flowering, flower

diameter (cm), flower stalk thickness (cm), flower stalk length (cm), number of ray florets flower⁻¹, number of suckers plant⁻¹ and number of flowers per plant per year. Vase life study were also carried out. The genotype phenotypic and environmental coefficient of variation was calculated as suggested by Burton (1952) and heritability as suggested by Hanson *et al.* (1956).

RESULTS AND DISCUSSION

Analysis of variance revealed that mean squares due to genotypes were significant for all the characters studied, the amount of variation about eleven characters in thirty genotypes measured in terms of range mean, phenotypic coefficient of variation (PCV), genotypic coefficient of variation (GCV), environmental coefficient of variation (ECV) along with the amount of heritability (h²) and the expected genetic advance as per cent of mean (GAM) are presented in Table 1. The widest range of variation was recorded by number of ray florets flower⁻¹ (54.13–435.73), followed by leaf area (143.89–274.93), number of days required for first flowering (51.1–78.53), number of flowers per plant (42.27–62.87), flower stalk length (52.40 – 70.71), number of leaves (30.73–48.33), plant spread (56.90 – 74.26) and vase life (9.07–17.07), whereas narrowest range was observed for flower