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ANALYSIS OF VARIANCE FOR DIFFERENT TRAITS OF CHINA ASTER (*Callistephus chinensis* L.)

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ABSTRACT

Six China aster genotypes were evaluated in 4 environments Viz., E_1 (Winter 2003-04) with recommended fertilizer dose, E_2 (winter with half recommended fertilizer dose), E_3 (Summer, 2003-04 with recommended dose) E_4 (Summer, 2003-04 with half recommended dose of fertilizer). Studies analysis of variance indicated significance of genotypic variance for all the characters studied. Environment variance was significant for all characters except plant height. G X E interaction was significant for primary branches, secondary branches, stalk length, average fresh weight of flower, and fresh weight of plant and yield of flower per hectare. Environment (linear) variance was significant for all characters except, number of secondary branches and day for 100 per cent flowering, genotype X environment (linear) was significant for flower diameter, fresh weight of flowers, dry weight of plant and yield per hectare. Pooled deviation was also significant for most of the characters studied. Study revealed the importance of variance in judging the stability of China aster when grown in various environments.

Key words : Analysis of variances, Traits, China aster.

China aster (*Callistephus chinensis* L.) is among the most popular and commonly used flower crop dry both as cut flower and for loose flower purpose. Today it is of the most commercial flowers grown all over the world. China aster is also popular as bedding plant and used in herbaceous borders in gardens. It is grown as a potted plant and its dwarf types are suitable for hedges. It is extensively grown in Maharashtra, Tamilnadu and West Bengal. In Karnataka it is widely grown around Bangalore, Chitradurga and Kolar districts. It is grown successfully in open conditions for year round production in *Kharif, rabi* and Summer to have continuous supply of flowers, till date very meager work has been done in improvement of this crop. In the present days of globalization we have to gear up with the challenges of increasing our exports of horticulture commodities after value addition for stabilization of prices and realization of more benefits to farmer. Genotype-environment interactions pose a major problem in developing new cultivars and choosing suitable cultivars for specific location. Keeping all these points in view the present investigation was carried out with an objective to study the analysis of variance and environmental studies for different China aster genotypes for various growth, yield and quality parameters.

MATERIALS AND METHODS

An investigation was undertaken in winter 2003-2004 and summer 2003-2004 at Kitture Rani Channamma College of Horticulture, Arabhavi, University of Agricultural Sciences, Dharwad. Six genotypes namely Phule Ganesh White, Phule Ganesh purple, Phule Ganesh Violet, Phule Ganesh Pink, Namdhari Pink and Kamini, were evaluated for quality traits.

The experiments were laid out in randomized block design with four replications under four environments. E_1(Winter 2003-2004, with recommended package of practices), E_2 (Winter 2003-2004, half recommended package of practices), E_3 (Summer 2003-2004, with recommended package of practices) and E_4 (Summer 2003-2004, package of practices with half recommended dose of fertilizer), the recommended dose of fertilizer for China aster of 180:120:60 Kg NPK/ha.Various cultural practices were followed as and when required. Forty days old, healthy and uniform seedlings were transplanted at a spacing of 30 X 30 cm, half of N and full amount of P and K were applied as per the treatments as basal dose. 10 days after transplanting and the reaming half of N was top dressed one month after transplanting. Observations were taken from the five randomly selected plants. The data was subjected to stability analysis as per Eberhart and Russell (1966) model. The magnitude of genotype X environment interaction as well as influence of environments on genotypes and magnitude of predictable and unpredictable sources of variation towards