



## Research Paper

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# Variability, heritability and genetic advance studies in French Marigold (*Tagetes patula* L.)

■ S. ANUJA AND K. JAHNAVI<sup>1</sup>

### Members of the Research Forum

#### Associated Authors:

<sup>1</sup>Department of Horticulture, Faculty of Agriculture, Annamalai University, Annamalai Nagar, CHIDAMBARAM (T.N.) INDIA

#### Author for correspondence :

S. ANUJA

Department of Horticulture, Faculty of Agriculture, Annamalai University, Annamalai Nagar, CHIDAMBARAM (T.N.) INDIA

**ABSTRACT :** Genetic variability and heritability studies involving 30 genotypes of French Marigold indicated that there were highly significant differences between the genotypes for flower yield and seven other characters. Comparison of genotypic and phenotypic co-efficient of variation for different traits indicated that the values of PCV were higher as compared to GCV due to the influence of environment. High genotypic co-efficient of variation was observed for stemgirth, flower head weight and flower yield per plant. Heritability estimate in general were high for most of the characters studied. High heritability coupled with high genetic advance (as per cent of mean) was observed for number of flowers per plant, flower yield per plant, stem girth and plant height. Hence, these characters need to be given more importance in selection as these are expected to be controlled by additive genes.

**KEY WORDS :** French Marigold, Variability, Heritability, Genetic advance

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Marigold is one of the most important species grown commercially for loose flowers in different parts of India especially in the tropical and subtropical regions. Marigold gained popularity among gardeners and flower dealers on account of its easy culture and wide spectrum of attractive colours, shape, size and good keeping quality. French Marigold (*Tagetes patula* L.) is an important member of compositae family which is commonly used in landscape design and it is the native of Mexico (Kalpan, 1960).

The colour of the flowers may be yellow, orange, golden yellow, primrose, mahogany, rusty red, tangerine or deep scarlet or a combination of these colours. Due to the attractive colours it make them most popular. The present study was aimed to identify the genetic parameters that control the flower yield and other yield attributing factors in order to identify the best genotype of French Marigold, which can be further exploited for increased yield of flowers.

## RESEARCH METHODS

The present investigation on the variability, heritability and genetic advance studies in French Marigold was carried out at vegetable field unit, Department of Horticulture, Faculty

of Agriculture, Annamalai University during (Aug-Oct) 2010. Thirty genotypes of French Marigold (*Tagetes patula*) collected from diverse source were used for the present study. Among the genotypes, 15 were obtained from Bangalore, 5 from University of Agricultural Sciences, Dharwad, 5 local genotypes were collected from different parts of Karnataka, and 5 genotypes from Tamil Nadu. Thirty genotypes were assessed in a field experiment under Randomized Block Design with three replications. Twenty plants were maintained in each replication with a spacing of 20 x 20 cm between row and plant, respectively. Cultural practices including need based plant protection measures were followed as per standard recommendations (Yadav and Bose, 1983).

Observations were recorded on ten randomly tagged plants from each genotype of each replication. Observations were recorded on plant height (cm), stemgirth (cm), number of branches per plant, days to first flowering, duration of flowering (days), flower head diameter (cm), flower head weight (g), number of flowers per plant, flower yield per plant (g) and flower yield per plot (kg). The phenotypic and genotypic co-efficient-of variation were estimated by the formulae given by Burton (1952). Heritability in broad sense was calculated according to Robinson (1966).