Research Paper

Correlation and path co-efficient analysis in French Marigold

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ABSTRACT : In French Marigold, genotypic and phenotypic correlations and path-coefficient analysis were studied for seven characters V13. Plant height, stem girth, number of branches per plant, days to first flowering, flower head diameter, flower head weight and number of flowers per plant. The correlation studies revealed that stemgirth, flower head diameter and number of flowers per plant were found to be positively correlated with flower yield. Path analysis revealed that flower head diameter, days to first flowering and number of flowers per plant had maximum positive direct effect on yield of flowers. Hence, these traits deserve greater weightage than other traits while formulating selection indices in French Marigold.

KEY WORDS : French Marigold, Correlation, Path analysis

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French Marigold (*Tagetes patula* L.) is an important member of compositae family which is commonly used in landscape design and it gained popularity among the gardeners and flower dealers on account of its easy culture and wide specturam of attractive colours, shape, size and good keeping quality. Yield is a complex character controlled by polygenes and it is associated with many other characters which are relatively simply inherited. Selection on the basis of the component characters has been considered to be useful as compared to selection based on yield alone. Such yield contributing factors have been reported by Sreekala *et al.* (2002) in African Marigold, Balaram and Janakiram (2008) in Gladiolus. This information is lacking in French Marigold. Therefore, field investigation was carried out with a view to study the character association and direct and indirect effect of independent characters on dependent Marigold flower yield.

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 genotype 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), stem girth (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). Phenotypic and genotype correlations were worked out by the formulae suggested by Abjibourie *et al.* (1958) and path co-efficient analysis of various characters was calculated as per Dewey and Lu (1959).

RESEARCH FINDINGS AND DISCUSSION

The estimates of phenotypic and genotypic correlation