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RESEARCH PAPER

Assessment and genetic variability in garden pea (*Pisum sativum* L. var. Hortense)

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Abstract : An experiment was carried out at experimental farm of Department of Horticulture, Janta P.G. College, Bakewar, Etawah during the year 2007-08 to evaluate twenty five diverse genotypes of pea. Analysis of variance indicated highly significant difference among the genotypes for all the characters indicating the presence of wide range of variability in the genotypes. Among the entries evaluated, the genotype VRP-345 recorded maximum plant height (173.50 cm). Days to 1st flower emergence (36.90 days), days to 50% flower emegence (41.70 days), days to 1st pod set (41.80 days) and days to maturity of green pod (63.30 days) was recorded minimum in the genotype VRP-5. The number of primary branches/plant ranged from 1.20 (VRP-301) to 3.10 (VRP-38). The maximum pod length (9.29 cm) and diameter (1.38 cm) was recorded in genotype VRP-7 and VRP-8, respectively. The maximum number of pods/plant was recorded in genotype VRP-190 (47.00). The number of seeds/pod was observed in genotype VRPMR-10 (8.70) and its ranged from 5.60 to 8.70. The 100-seed weight varied from 19.98 g to 28.20 g and maximum in VRP-22. Maximum shelling percentage was recorded in genotype VRP-86 (55.84 %). The maximum green pods yield/plant was recorded in genotype VRP-38 (240.72 g) and it ranged from 74.48 to 240.72 g. VRP-5 was found the earliest flowering and fruiting genotype among all the genotypes under study. The phenotypic variance and PCV were higher as compared to genotypic variance and GCV for all the characters. Maximum GCV and PCV were recorded for plant height followed by number of pods/plant and green pod yield/plant. The highest heritability was recorded for green pod yield/plant and days to 50 per cent flower emernece and its higher value may be attributed to additive gene action. The estimate of genetic advance showed a wide range from 0.07 to 73.38 and it was highest for green pod yield/plant. High heritability coupled with genetic advance indicated that importance of the considerable additive (heritable) gene effects.

Key Words : Garden pea, *Pisum sativum* L. var. Hortense, Genotype, GCV, PCV, Heritability, Genetic advance, Variability

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INTRODUCTION

Pea is a very nutritious vegetable grown in the cool season throughout the world. It is grown as a vegetable crop for both fresh and dried seed. Pea contains high percentage of digestible protein, along with carbohydrates and vitamins. The protein concentration of peas ranges from 15.50-39.70 per cent (Davies *et al*., 1985). Large proportion of peas are processed (canned, frozen or dehydrated) for consumption in off season. A wide range of genetic variability is available in pea, providing good a scope for improvement in yield and associated characters of pea through selection. To initiate any effective selection programme, depends on available information on the nature and magnitude of variability present in genetic stocks, heritability and genetic advance is of considerable importance for a breeder. Therefore, an attempt was made in the present investigation to estimate the extent of variability, heritability and genetic advance by utilizing twenty five divergent pea lines.

MATERIALS AND METHODS

An experiment was carried out at experimental farm of Department of Horticulture, Janta P.G. College, Bakewar,

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