THE ASIAN JOURNAL OF HORTICULTURE
Volume **8** | Issue 1 | June, 2013 | 280-284

Research Paper

Article history **:**
Received : 09.02.2013
Revised : 19.04.2013
Accepted : 15.05.2013

Genetic variability studies in bell pepper (*Capsicum annuum* L.)

SANTOSH KUMARI

Author for correspondence :
Department of Vegetable Science, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, SOLAN (H.P.) INDIA
Email : santoshstpc@gmail.com

ABSTRACT : Bell pepper is one of the most important vegetable crops grown all over the world. It is of commercial significance particularly for the hills of Himachal Pradesh. Present study was conducted at the Research Farm of Vegetable Science, Department of Vegetable Science, Nauni, Solan, H. P. Nineteen genotypes of bell pepper were assessed for genetic variability, heritability and genetic gain for the characters number of fruits per plant, average fruit weight, fruit yield per plant, fruit length, fruit breadth, plant height, number of seeds per fruit and pericarp thickness. Significant differences were observed for all the traits among nineteen diverse genotypes. Higher genotypic and phenotypic coefficients of variation were recorded for number of fruits per plant (30.49 % and 30.63 %), average fruit weight (30.85 % and 30.03 %) and fruit yield per plant (32.12 % and 32.26 %) indicating that these traits had wide genetic variability and would respond better to selection. High heritability coupled with high genetic gain was observed for number of fruits per plant (57.85 % and 57.85 %), average fruit weight (60.62 % and 60.62 %) and fruit yield per plant (65.80 % and 65.80 %) indicating the role of additive gene action for the inheritance of these traits. Fruit yield per plant had positive and significant correlation with number of fruits per plant (0.752) and average fruit weight (0.625). Maximum positive direct effect towards yield per plant was contributed by number of fruits per plant (0.737) and average fruit weight (0.675).

KEY WORDS : Bell pepper, Co-efficients of variation, Heritability, Genetic gain, Correlation, Path analysis

HOW TO CITE THIS ARTICLE : Kumari, Santosh (2013). Genetic variability studies in bell pepper (*Capsicum annuum* L.), *Asian J. Hort.*, **8**(1) : 280-284.

Bell pepper is a high value vegetable and an important crop of temperate regions. It is used as salad, cooked as vegetable, pickled or processed and is appreciated worldwide for its flavour, aroma and colour, It is an important source of vitamin A and vitamin C. The crop originated in new world tropics and subtropics and was introduced in India by Britishers in nineteenth century in Shimla and Nilgiri hills. Capsicum is now widely cultivated in Karnataka, Tamilnadu, Himachal Pradesh, Uttarakhand and Darjeeling district of West Bengal. Mid hills of Himachal Pradesh are leading suppliers of fresh market bell pepper of excellent quality due to congenial climate which produces big sized blocky fruits with high flavour and shiny skin, to the plains during summer and rainy season and sells at premium prices, thus bringing lucrative returns to the hill farmers. Presence of sufficient variability in basic genetic material of any crop is a pre requisite for effective selection and improvement of superior genotypes. It is also equally important to assess the relative proportion of genetic and environmental components of variability, nature and extent of association between different yield attributes and relative importance of each component on yield. The genetic parameters like genetic coefficients of variability, heritability, genetic gain, nature and extent of association between different yield attributes and relative importance of direct and indirect influence of each of the component traits on yield provide insight into the genetic makeup of material and the basis of selection for yield contributing traits. There is a need for genetic restructuring of the bell pepper germplasm for increasing the productivity considering the preference of the consumers for typical bell shaped fruits with moderate size. For this, the first step is evaluation of available variability in the germplasm so as to identify the potential genotypes for