

Genetic variability, heritability and genetic advance in cauliflower (*Brassica oleracea* var. *botrytis* L.)

■ PRATIMA SINGH, SANJAY KUMAR, SUTANU MAJI AND ABHISHEK SINGH

SUMMARY

Sixteen genotypes of cauliflower were evaluated to study the magnitude of genetic variability and character association for growth, yield and quality traits. The genotypes were evaluated for fourteen quantitative characters *viz.*, plant height, stem diameter, number of leaves, leaf length, leaf width, fresh weight of leaf, total weight of the plant, days taken to curd initiation, days taken to curd maturity, diameter of the curd, average weight of curd with guard leaves, curd weight without guard leaves, vitamin C and yield of curd with guard leaves. The Present study showed that both phenotypic co-efficient of variation (PVC) and genotypic co-efficient of variation (GCV) were higher for most of the traits and indicates that characters were much influenced by environmental factors. The estimate of high heritability in broad sense was observed for two traits *viz.*, curd weight without guard leaves and vitamin C, while the moderate heritability was observed for stem diameter. The high genetic advance in per cent of mean showed by curd weight with guard leaves while the lowest genetic advance in per cent of mean showed by leaves plant⁻¹. High heritability coupled with high genetic advance was observed for curd weight with guard leaves which are governed by additive gene and could be effectively improved through selection. The genotypes Pusa Snowball K-1 showed high genotypic co-efficient of variability for vitamin C followed by Pusa Sharad and Pusa Hybrid-2, while the genotype K-1 showed low genotypic and phenotypic co-efficient of variability for number of leaves plant⁻¹.

Key Words : Genetic variability, Heritability, Genetic advance, Cauliflower

How to cite this article : Singh, Pratima, Kumar, Sanjay, Maji, Sutanu and Singh, Abhishek (2013). Genetic variability, heritability and genetic advance in cauliflower (*Brassica oleracea* var. *botrytis* L.). *Internat. J. Plant Sci.*, **8** (1) : 179-182.

Article chronicle : Received : 19.07.2012; Revised : 25.11.2012; Accepted : 10.12.2012

The cauliflower (*Brassica oleracea* var. *botrytis* L.) is an important vegetable not only among the cole crops but also among other groups of vegetables grown in india. It is thought to have been domesticated in Mediterranean region since the greatest range of variability in the world types of *Brassica oleracea* is found there. It is herbaceous annual vegetable grown for its tender 'curd' and biennial for seed production. It has small, thick stem, bearing whorl of leaves and branched tap root system. The main

growing point develops into shortened shoot system whose apices make up the convex surface of curd and the curd is a prefloral fleshy apical meristem. The edible part *i.e.* curd is generally white in colour and may be enclosed by inner leaves before the exposure. The nature and amount of genetic variability in the germplasm indicate the scope of improvement in the character through selection. However, the efficiency of selection in approving the character by exploiting the genetic variability character in question the genotype and phenotypic co-efficient of variation and helpful in expressing the nature where as the estimate of the heritability provides index of transmissibility of character, respectively with these views, the present investigation has been conducted to assess the GCV and PCV of selected 16 genotypes of cauliflower under Lucknow condition.

MEMBERS OF THE RESEARCH FORUM

SANJAY KUMAR, Department of Applied Plant Science (Horticulture) Babasahab Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA
Email: sanjay123bhu@gmail.com

Address of the Co-authors:

PRATIMA SINGH, SUTANU MAJI AND ABHISHEK SINGH,
Department of Applied Plant Science (Horticulture) Babasahab Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA

MATERIALS AND METHODS

The experimental material for the present study