➔DOI : 10.15740/HAS/AJBS/12.2/209-222
e ISSN-0976-8343 | ■ Visit us : *www.researchjournal.co.in*
ASIAN JOURNAL OF BIO SCIENCE
Volume **12** | Issue 2 | Oct., 2017 | 209-222

RESEARCH **P**APER

Genetic variability, divergence, correlation and path analysis in *Foeniculum vulgare* Mill. germplasm

PAWAN KUMAR PATIDAR[1], RAMESH CHOUDHARY[1] **AND** BHANWAR LAL JAT[2]

[1]Department of Agriculture, Bhagwant University, AJMER (RAJASTHAN) INDIA
[2]Department of Agricultural Biotechnology, Bhagwant University, AJMER (RAJASTHAN) INDIA
Email : ppatidar927@gmail.com

Article Info : Received : 25.05.2017; Revised : 19.08.2017; Accepted : 17.09.2017

The importance of fennel is well realized on account of its high remunerative prices, domestic consumption, medicinal value and means to get earn foreign exchange. Despite the economic importance of fennel, disease resistant, locally acceptable and high yielding crop. The present investigation was therefore, carried out to estimate the magnitude and nature of genetic variability in terms of variation, heritability, genetic advance and genetic diversity for different traits like seed yield per plant and yield contributing traits in a set of 50 germplasm with four checks and extent of environmental influence on these traits, form the basis on which a breeder can predict the extent of dependence on phenotypic selection for improvement of traits. The analysis of variance revealed that significant amount of variability was present in germplasm lines for almost all morphological traits studied as days to germination, 50 per cent flowering, king umbel anthesis, number of number of primary branches, number of secondary branches, plant height (cm), diameter of king umbel (cm), number of umbels per plant, number of umbellates per umbel, number of seeds per umbel, at a test-weight (g) and seed yield (g). A wide range of mean for yield and some of its contributing traits indicates good chance for improvement of yield through direct selection or by transferring desired traits. On the basis of mean performance of yield and other yield contributing morphological traits, the germplasm AF-22, AF-63, AF-85, AF-96, AF-128, AF-48, AF-45, AF-62, AF-47, AF-58, AF-80, AF-154, AF-32, AF-44, AF-108, AF-140, AF-134, AF-22, AF-63, AF-85, AF-96, AF-128, AF-48, AF-45, AF-62, F-47, AF-58, AF-80, AF-154, AF-32, AF-44, AF-108, AF-140, AF-134, AF-22, AF-63, AF-85, AF-96, AF-128, AF-48, AF-45, AF-62, AF-47, AF-58, AF-80, AF-154, AF-32, AF-44, AF-108, AF-140, AF-134, were found to be superior. The variability of characters was compared on the basis of co-efficient of variation. The genotypic co-efficient of variation (GCV) and phenotypic co-efficient of variation (PCV) were worked out. Higher GCV (genotypic co-efficient of variation) was recorded for number of umbels per plant (15.7), seed yield (12.4) and number of secondary branches per plant (12.3), it expresses the true genetic potential which indicated the presence of high amount of genetic variability for these characters thus, selection may be more effective for these characters because the response to selection is directly proportional to the component of variability, while, number of seeds per umbellate (11.9), king umbel diameter (10.8) and umbellate per umbel showed moderate to high genotypic co-efficient of variation. Whereas primary branches (9.6), test weight (8.1) showed low magnitude of genotypic co-efficient of variation. Higher PCV was recorded for number of umbels per plant (16.7), king umbel diameter (14.3) and number of secondary branches per plant (14.0), while, seed yield (g) (12.5), number of seeds per umbellate (12.1) and number of umbellates per umbel (11.1) showed moderate to high phenotypic co-efficient of variation. Whereas number of primary branches (10.6), test weight (g) (8.9) showed low magnitude of phenotypic co-efficient of variation.

Key words : Variability, Germplasm, Phenotypic, Heritability, Fennel

How to cite this paper : Patidar, Pawan Kumar, Choudhary, Ramesh and Jat, Bhanwar Lal (2017). Genetic variability, divergence, correlation and path analysis in *Foeniculum vulgare* Mill. germplasm. *Asian J. Bio. Sci.*, **12** (2) : 209-222.**DOI : 10.15740/HAS/AJBS/12.2/209-222.**