

Co-rrrelation and path analysis in fenugreek (*Trigonella foenum-graccum* L.)

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ABSTRACT

Co-rrrelation and path analysis in 60 (Sixty) promising genotypes of fenugreek indicated that yield per hectare was closely associated with number of grains per pod, length of pod, 1000-grain weight and yield per plot. Path co-efficient genotypic level revealed that number of grains per pod, number of pods per plant, 1000-grain per pod, number of days to maturity, length of pod and number of days to 50 per cent flowering showed maximum positive direct effect on grain yield per hectare indicated that these are main contributors to yield. However, path co-efficient at phenotypic level showed that yield per plot had maximum direct positive contribution followed by number of branches per plant, 1000 grain weight, length of pod, number of days to 50 per cent flowering and height of the plant. Hence, these characters may be given consideration while making selection for the improvement of fenugreek.

Key words : Fenugreek, Correlation, Path analysis.

Fenugreek (*Trigonella foenum-graecum* Linn) is one of the important seed spices. It is used as condiments and leafy vegetables. Yield is complex character and is jointly or individually contributed by many other traits. Selection for yield is more effective when it is based on components characters which are highly heritable and positively correlated. When more number of variables is considered in correlation the association becomes more complex and obvious. The path analysis is useful under such circumstances. This gives clear picture of the direct and indirect effect of various traits on yield. Relationship with yield of nine characters in fenugreek was studied and reported in this text.

MATERIALS AND METHODS

The experiments was laid out under AICRP on Spices at horticultural Research farm, Department of Horticulture, Tirhut College of Agriculture, Dholi, Muzaffarpur with (sixty promising) genotypes of fenugreek. The sowing was done on 25th October 2007 in randomized block design with two replications. The inter and intra row spacing was 30 x 10 cm. Oservations were recorded for nine traits on five randomly selected plants per replication for each promising genotypes. Co-rrrelation co-efficient was computed by using the formula of Jonnson *et al.* (1955) and path co-efficient by Dewey and Lu (1959).

RESULTS AND DISCUSSION

The phenotypic and genotypic co-rrrelation co-efficient between different pair of characters presented in the Table 1 revealed higher estimates of genotypic correlation

co-efficient than the phenotypic there by suggesting an inherent association between various characters. The character yield per hectare showed significant positive association with number of grains per pod, length of pod, 1000-grain weight and yield per plot at both phenotypic and genotypic level, however, number of pods per plant was found significant positive association with genotypic level. Similar results were reported by Ahmed *et al.* (1999), Lohakare *et al.* (2008) and Mohanty (2001). The Yield per hectare had non-significant positive association with height of the plant at both phenotypic and genotypic level. However, the yield per hectare had non significantly positive association with number of pods per plant at phenotypic level. Yield per hectare also showed significant negative association with number of days to 50 per cent flowering at both level and negative significant co-rrrelation was recorded with number of branches per plant and number of days to maturity at genotypes level. However, yield per hectare exhibited non-significant negative association with number of branches per plant and number of days to maturity at phenotypic level. Similar results were reported by Ponnuswami and Irulappam (1994). The character plant height exhibited positive and significant co-rrrelation with number branches per plant number pods per plant, number of days to maturity and thousands grain weight at genotypic level. Number of branches per plant showed positive and significant correlation with number of days to 50 per cent flowering at genotypic level while number of pods per plant at phenotypic level. Number of days to 50 per cent flowering showed significant positive association with number of days to maturity at genotypic level. Number of grains per pod showed significant positive association with length of pod, 1000-grain weight and yield