

Correlation and path coefficient analysis in pointed gourd (*Trichosanthes dioica* Roxb.)

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ABSTRACT

Twelve cultivars of pointed gourd (*Trichosanthes dioica* Roxb.) collected from different places were evaluated under Randomised Block Design with three replications at Babupur Diara near Bihar Agricultural College, Sabour, Bhagalpur for correlation and path coefficient analysis between yield and its attributing characters. Number of fruits per plant, fruit length, fruit diameter and fruit weight were major contributing factors towards yield and selection based on these characters can be effective for developing high yielding varieties.

Key words: Pointed gourd, Correlation, Path Coefficient.

Pointed gourd (*Trichosanthes dioica* Roxb.), commonly known as parwal is one of the most important cucurbitaceous vegetables cultivated during Spring –Summer months. It is extensively grown in Bihar, West Bengal and Eastern Uttar Pradesh and to some extent in Assam, Orissa, Madhya Pradesh and Maharashtra. It serves as an important source of livelihood especially to the population of riverine places of Bihar, West Bengal and Uttar Pradesh where farmers get better price in the market and earn good profit from this crop. It is an important vegetable from medicinal, nutritional and dietic point of view also.

The soil properties of the experimental plot indicated that the soil was sandy loam in texture. The values of organic carbon ranged between 0.40 and 0.42 per cent; available N-180 and 182 kg/ha, P_2O_5 - 18.0 and 18.4 kg/ha, available K_2O 210.0 and 215.0 kg/ha during two year of experimentation. The pH value was 8.0 and 7.9 i.e; slightly alkaline in reaction with E.C. value of 0.18 and 0.20 $ds\ m^{-1}$ during the years 1999-2000 and 2000-2001, respectively. Thus the soil fertility indicated low organic carbon and available nitrogen and medium in available P_2O_5 and K_2O in the test plot during both the years of experimentation. The total amount of annual rainfall received during first and second year of trial were 1375.5 and 1257.4 mm, respectively.

The yield of different cultivars is variable and is completely affected by a large number of yield attributes. A knowledge of correlation coefficient among the yield and its attributes helps the plant breeder in his effort to identify suitable genotypes for high yield. Path analysis is

helpful in partitioning the direct and indirect effect of various attributes. There is very little literature available in this respect on pointed gourd. Present work was undertaken to collect informations on these aspects by test 12 pointed gourd cultivars for two consecutive years 1999-2000 and 2000-2001 under Gangetic Diaras of Eastern Bihar.

MATERIALS AND METHODS

Present trial was conducted at Bihar Agricultural College, Sabour at Babupur Ganga Diara Under the aegis of ICAR's Adhoc Project during the years, 1999-2000 and 2000-2001 for correlation and path analysis consisting of twelve commercial popular cultivars namely Rajendra Parwal-1, Rajendra Parwal-2, Swarna Rekha, Swarna Alokik, Kranti, Bombaiya, Nemia, Kelwa, Doglaha, Mirdangia, Sampulia and Charkolwa. They were collected from the districts of Bhagalpur, Munger, Khagaria, Begusarai, Darbhanga, Muzaffarpur, Saram, Buxar, Madapura in Bihar as well as Ranchi in Jharkhand. The seed rate comprised of 2500 cuttings/ha were planted after flood recession at 2m x 2m spacing on 25th and 18th October during first and second years of experimentation. All the recommended cultural operations were done in time and plant protection measures were also adopted as and when required. The observations were recorded on five randomly selected vines from each row of test plots for number of fruits/plant, fruit length, fruit diameter, fruit weight and fruit yield. The correlation coefficient and path coefficient analysis were carried out.

RESULTS AND DISCUSSION

The data pertaining to correlation coefficients