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Path coefficient analysis studies in french bean (*Phaseolus vulgaris* L.)

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Abstract **:** Twelve genotypes of French bean were assessed for path coefficient analysis studies at Main Agriculture Research Station, Raichur. Highly significant differences were observed in the genotypes for all the characters under study. Path coefficient analysis revealed that leaf area, pod weight, number of seeds per pod, number of pods per plant, pod length and pod width exerted maximum direct effect on pod yield per hectare at both genotypic and phenotypic level. Leaf area index had highest indirect effect on pod yield per hectare through leaf area at genotypic level and pod length had highest indirect effect on pod yield per hectare through weight of 10 pods at phenotypic level.

Key words **:** French bean, Path analysis, *Phaseolus vulgaris* L.

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For any crop improvement, basic information on the variability present in the crop is essential. Yield being a complex trait, is collectively influenced by various yield attributes, which are polygenically inherited and influenced by environmental variations. The effective selection for improvement of these traits is determined by magnitude and nature of interaction between genotypic and phenotypic variability. It is, therefore, required to know the heritable and non-heritable components with genetic parameters such as genotypic and phenotypic coefficient of variation, heritability and genetic advance. French bean, *Phaseolus vulgaris* L. (2n = 2x = 22) also known as snap bean, kidney bean, garden bean or string bean, is one of the most important leguminous vegetables grown for its tender fleshy green pods, shelled green seeds and also dry beans. It has anti-diabetic property and is good for natural cure of bladder burns and cardiac problems, diarrhoea, sciatica and tenesmus. It is a nutritive vegetable, rich in protein (1.7 g), calcium (132 mg), thiamin (0.08 mg) and vitamin C (24 mg per 100 g of edible pods). French bean originated from Central America and Peruvian Andes in South America. It could spread to Europe during 16th and 17th centuries and reached England by 1594. It was introduced to India during 17th century from Europe. The statistics with respect to this crop is very deficient owing to the small area of production and short duration. However, as per as the FAO estimates, it is grown in the world in an area of 0.83 m ha with annual production of 5.64 m t with productivity of 6.76 t per ha. In India, it is mainly grown in Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. Annually, french bean is grown in an area of 0.15 m ha with annual production of 0.42 m t and productivity of 2.8 t per ha (FAO STAT, 2002). Improvement made in crop varieties is mainly concentrated on increasing yield and yield attributing characters. Studies of correlation between different quantitative characters provide an idea of association. It could