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SHORT COMMUNICATION

UNVEILING THE POTENTIAL: FRENCH BEAN (*PHASEOLUS VULGARIS* L.) PERFORMANCE IN CHAMPHAI DISTRICT MIZORAM

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Abstract: This study was designed in order to evaluate the yield performance of three French bean varieties namely Arka Anoop, Arka Suvidha and Arka Saraath in Champhai District Mizoram. It has been observed that variety Arka Anoop recorded maximum values with respect to Plant height Primary branches, Pod weight, Average No of pods per plant, and yield as compared with other two varieties namely Arka Suvidha and Arka Sarath.

Keywords: Frencah Bean, Yield, *Phaseolus vulgaris*, Mizoram

INTRODUCTION

French bean (*Phaseolus vulgaris* L.; 2n=22) is an important leguminous vegetable crop which is grown popularly for its green pods and dry seeds. It is native to temperate region of Central America. It can be grown throughout the world and contribute nearly 30% of the total production of food legumes (Vasishtha and Srivastava, 2012). It is known by various names such as snap bean, kidney bean, haricot bean and rajma in Hindi. It is believed to be derived from a wild vine originally evolved in the hilly regions of Middle America and the Andes, which substantiates its evolutionary changes. In hilly regions inhabited by undernourished populations, these beans serve as a crucial protein source, often referred to as the "meat of the poor." A hundred grams of green pods boast high vitamin and mineral content, containing 1.7 grams of protein, 0.1 gram of fat, 4.5 grams of carbohydrates and 1.8grams of fiber. Additionally, they possess medicinal properties beneficial in managing diabetes and certain cardiac issues.

Table 1: Growth and yield of French Bean varieties

Varieties	Plant height (cm)	Primary branches	Pod weight (gm)	Average no of pods per plant	Yield/ha (qtl)
Arka suvidha	41.43	4.35	13.05	19.37	76.77
Arka Saraath	37.58	3.78	11.1	16.56	67.81
Arka Anoop	43.78	5.70	14.70	23.14	81.71
S.E m±	0.60	0.21	0.10	0.94	1.09
C.D @5%	1.97	0.69	0.33	1.33	3.54

MATERIALS AND METHODS

The three varieties viz., Arka Sarath Arka Suvidha and Arka Anoop released by Indian Institute of Horticultural Research (IIHR), Bengaluru were used under On Farm Testing during Rabi 2022 at farmers field. The seeds were sown in the first fortnight of September following recommended spacing of 45 cm between rows and 30 cm between plants. The recommended FYM at the rate of 20 t/ha and

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fertilizer at the rate of 30 kg N, 40 kg P2O5 and 20 kg K2O per ha were applied to the crop. The observations were recorded on five randomly selected plants per replication for each variety for most desirable character like plant height, no. of branches per plant, pod weight(gm), number of pods /plant, duration and yield (q/ha) in Table 1. The data on selected parameters of demonstration plots as well as control plots were collected on regular basis and continued till harvesting of crops. Regular field visits were made by the team of KVK scientists. The observations were recorded on number of primary branches per plant, number of green pods per plant, green pod length and green pod yield. The statistical analysis of the data was performed in randomized block design.

RESULT AND DISCUSSION

1. Plant height

The maximum plant height was observed in Arka Anoop (43.78 cm) followed by Arka Suvidha (41.43 cm) while lowest plant height was recorded in Arka Sarath (37.58 cm) The varietal differences in plant height were due to genotypic make up. Phookan et al. (1990) reported variations among the hybrids in plant height.

2. Number of primary branches per plant

The data (Table 1) showed that significantly higher number of primary branches per plant were recorded in Arka Anoop followed by Arka Suvidha In Arka Anoop, number of primary branches per plant were 5.70, lowest primary branches were observed in Arka Sharath recorded 3.78. This finding was incongruity with those of Anjanappa *et al.* (2000),

3. Pod Weight

Significantly maximum pod weight (14.70gm) was noticed in Arka Anoop followed by Arka Suvidha where Pod weight was recorded 13.05 gm whereas lowest pod weight was noticed in Arka Sarath (11.10gm)

4. Average no of pods

Table 1 showed that maximum number of green pods per plant (23.14) was recorded in Arka Anoop followed by Arka Suvidha (19.37) and lowest in Arka Sarath (16.56). This parameter is an important yield contributing trait and was in accordance with the results observed by Akhilesh *et al*. (2013) for number of green pods per plant.

5. Yield/ha

The yield parameters (Table 1) showed that significantly higher number of primary branches per plant, maximum green pods weight per plant and higher number of of green pod per plant were recorded in Arka Anoop (81.71 qtl/ha) followed by ArkaSuvidha (76.77 qtl/ha) while lowest was recorded in Arka Sarath (67.81). The pod yield variations amongst the genotypes under varying field conditions have been reported by several workers (Hariharram and Singh 1990).

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