



Varietal assessment of French bean in Tirap district of Arunachal Pradesh

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INTRODUCTION

French bean is generally known as kidney bean, common bean or rajmah which is highly nutritious as well as rich source of protein. Its fetches highest price among all pulses thus it is remunerative crop for farmers. Its have high potential of yield ranges from 12-15 t/ha green pods and 3 tonnes/ha of seeds in plains. It's mainly the crop of Rabi season; but after released of photo-thermo insensitive varieties it's cultivating in almost throughout the year. In Tirap district, there are several old varieties are growing by the farmers e.g. Pusa Parvati, contendor etc. Due to continuous cultivation of these old varieties in the district their yield has been reported declining and incidence of insect pests are too high. Thus farmers are not getting adequate income by cultivating these old varieties of French bean. Keeping all these facts and feedback from farmers, the Krishi Vigyan Kendra- Tirap Deomali, Arunachal Pradesh has decided to conduct "varietal assessment of higher yielding varieties of French bean" in the different locations of the district during Rabi season, 2021-22.

The two high yielding varieties- VL Bean-2 and Sultan Bean were used in assessment which are also resistant against major disease and pests. The total 05 no of trials were conducted in 04 villages e.g. Deomali, Nutan bast, Lekhi village and Sipini in total area of 0.10 ha. The seeds were sown during 4th week of October, 2021 @ 70 Kg/ha with spacing 45 cm x 10 cm. Before starting the trial, all the selected farmers were given training on the topic "scientific cultivation of French bean, in reference to Tirap district of Arunachal Pradesh." All the scientific package of practices was followed as per schedule. The trails were harvested during 4th week of January, 2022.



Seedling stage of VL bean-2

The weather condition prevailing during the crop season was found more conducive. Thus the result of the present investigation indicated that temperature was the normal but the rainfall during the crop period was appreciably varied- from normal to little bit excess. It is well known fact that each crop species has definite range of temperature for different

stages of growth and development. Beyond the upper and lower thresh hold of temperature, metabolic activity proceeding is reduced. The enzyme-protinase activity during the germination for supplying the energy to germinating and development plant is controlled by appropriate temperature.

Table: 1. Result of on farm trial on French bean

Parameters	Name of variety	
	VL Bean-2	Sultan Bean
Plant ht (cm)	42.1	39.6
Branch nos. /Plant	7.68	6.97
Pods nos./Plant	30.7	28.2
Seed nos./pod	6	5
Days to 50% flowering	42	45
Disease incidence (Fusarium wilt and collar rot)	Less	Medium
Yield (q/ha)	104	83
Gross cost (Rs./ha)	56,700	49,100
Gross return (Rs./ha)	1,56,000	1,24,500
Net return (Rs./ha)	99,300	88,900
B.C Ratio	2.75 : 1	2.53 : 1

The data from table: 1 show that VL Bean-2 recorded better over Sultan bean in every parameters e.g. the plant height 42.1 cm as compared 39.6 cm of Sultan bean, no of branch/plant: 7.68 as compared 6.97 of Sultan bean, Pods no/plant: 30.7 as compared 28.2 of Sultan bean, no of seeds/pod: 6 as compared to 5 of Sultan bean. For days to 50 % flowering, VL bean-2 recorded 42 days while Sultan bean took 45 days. Similarly, the yield of VL Bean-2 recorded 104 q/ha as compared to Sultan bean (83 q/ha).

In economic parameters; the gross cost (Rs/ha) the VL Bean-2 expense was 56,700 while Sultan bean was Rs 49,100/ha only. But in terms of Net return (Rs/ha) the VL Bean-2 yielded Rs 99,300 while Sultan bean recorded only Rs 88,900/ only. So, here data shows that VL bean-2 recorded better monetary return over Sultan bean; which will be the vital point of this assessment. In the same pattern Benefit cost ration also recorded higher with VL bean-2 (2.75:1) over Sultan bean (2.53:1).



Seedling stage of VL bean-2



Seedling stage of Sultan bean



Maturity stage of Sultan bean



Green pods VL Bean -2 vs. Sultan bean