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Knowledge of the respondents towards improved French bean cultivation practices in Ri-bhoi district of Meghalaya, India

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Abstract

This study was conducted in Ri-bhoi district of Meghalaya to assess the adoption behaviour of the respondents towards improved cultivation practices of French bean. A total of 130 respondents were selected purposively from ten villages under Um-sning block based on maximum number of French bean growers. An interview schedule based on the study was prepared and data were collected and processed through primary and secondary tables and statistical analysis. The respondents were contacted personally and interviewed. The study indicates that the majority of the French bean growers belonged to the young age group, acquired primary school education, had medium level of annual income with less than 1acre of land holding. Majority of them had medium level of knowledge and adoption regarding improved French bean cultivation practices. It was found that among the twelve independents variables, including age, education, occupation, annual income, family type, land holdings, extension contact, mass media exposure, sources of agricultural information, social participation and risk orientations there is positive and significant correlation with the knowledge and adoption of farmers towards improved French bean cultivation practices. The major constraints faced by the respondents were lack of labour forces, lack of irrigation water, lack of proper market, inadequate resource machinery etc.

Keywords: French bean cultivation, adoption behaviour, improved practices, socio-economic factors, constraints

Introduction

The cultivation and significance of French beans (*Phaseolus vulgaris* L.) are explored in the content, pressing their various names similar such as common bean, green bean, kidney beans, string bean, snap beans, fine beans, haricot bean or navy bean depending on the region. French beans are a largely sought-after crop globally, with India leading in both production and consumption, particularly of the Raj-Mah variety. The crop is grown by both large-scale growers and smallholder growers, and its dwarf and climbing growth habit makes it easy to cultivate in small gardens. French beans are adaptable to a wide range of soil, with well-drained loams being the most suitable and a soil Ph of 5.2-5.6 being optimal (Singh *et al*., 2022) [7].

French beans rank as the third most important food grain legume worldwide, after soybeans and peanuts, and offer significant nutritive and profitable benefits for both human and livestock. In India, the consumption of French beans has been steadily rising, especially in the North Eastern region, driven by adding mindfulness of its nutritive advantages. Farmers are increasingly turning to French beans due to their profitability compared to other pulses crops and their versality as a vegetable cover.

In Meghalaya, French beans ae primarily grown as an intercrop with maize. Tribal farmers in Meghalaya also cultivate French beans as a crucial crop, providing them with an additional source of income alongside their main crops. This practice has motivated farmers to continue growing French beans in subsequent years, showcasing the crop's importance in their livelihood**.** French bean is a traditional vegetable crop in the North-Eastern region, and its cultivation proves to be profitable in agricultural practices. Furthermore, this crop is relatively resistant to pest and disease issues, which is an additional benefit. As a self-pollinated crop, the production of French bean seeds and the maintenance of their purity is significantly easier than that of other vegetable crops. The tender pods are utilized as a vegetable, while the mature seeds are consumed as dal (Tongbram *et al.*, 2021) [8].

Objectives

1. To assess the socio-economic profile of the respondents.
2. To determine the knowledge of the respondent towards improved French bean cultivation practices.

To find out the association between selected independent variables with knowledge of improved French bean cultivation practices.

Research methodology

Locale of the study

The study was conducted in Ri-bhoi district of Meghalaya. The current studies utilized a descriptive research design, which is suitable for studies that seek to outline the characteristics of a phenomenon. A multi-stages sampling method was implemented to select the necessary samples for this study. Meghalaya consist of 12 districts, out of that Ri-bhoi district was chosen as maximum area under French bean cultivations. The Ri-bhoi district is divided into four blocks in which Um-sning block was selected through purposive sampling based on the maximum numbers of the respondents growing French bean. A total of 130 respondents were randomly selected on a proportional basis, reflecting the extent of French bean cultivation in each locality.

Methods and data collection: A pre-tested structured interview schedule, crafted to gather data aligned with the study's objectives, was created. A survey method of the data collection was utilized for the present study. The data were subsequently classified, tabulated, analysed to determine their relevance to the specified objectives.

Statistical Analysis of Data

The data collected from the respondents were converted into a three-point Likert scale and then tabulated. The data were assessed, and the relationship between the independent and dependent variables was establish by using mean, frequency, percentage, and correlation.

Results and discussion

Socio economic characteristics of the respondents

Tables 1: Characteristics of the respondents (N=130)

SI No	Attributes	Characteristics	Frequency	Percentage
1	Age	Young (below 35 years)	58	44.62
		Middle (36-55 years)	55	42.30
		Old (above 55 years)	17	13.08
2	Education	Illiterate	12	9.24
		Primary school	24	18.46
		Can read and write	16	12.30
		Junior high school	18	13.89
		Intermediate	20	15.38
		High school	19	14.61
		Graduate and above	21	16.15
3	Annual income	Low (up to 48,000)	7	5.38
		Medium (48,001-96,0000	74	56.92
		High (above 96,000)	49	37.70
4	Occupation	Agriculture	36	27.70
		Agri+ Labour	57	51.53
		Agri+ Business	23	17.70
		Agri= Service	4	03.07
5	House pattern	Hut	36	27.69
		Semi-cemented	52	40.01
		Cemented	42	32.30
6	Land holding	<1acre	65	50.00
		1-2 acre	40	30.76
		>2acre	25	19.23
7	Family type	Joint	54	41.54
		Nuclear	76	58.46
8	Extension con-tact	Low	33	25.38
		Medium	74	56.92
		High	23	17.70
9	Mass media exposure	Low	62	47.70
		Medium	55	42.30
		High	13	10.00
10	Social participation	Low	5	3.85
		Medium	114	87.69
		High	11	8.46
11	Sources of agricultural information	Low	46	35.38
		Medium	67	51.54
		High	17	13.07
12	Risk orientation	Low	10	7.69
		Medium	76	58.46
		High	44	33.85

The data presented in Table 1 indicated that 44.62 percent of the respondents are young age (above 35 years), 42.30 percent middle age (36-55 years) and 13.08 percent of the respondents are of old age (above 55 years). It also found that majority (18.46%) of the respondents were educated up-to Primary School level of education. It was revealed that majority (56.92%) of the respondents income was 48,001-96,000 rupees. It was observed that 27.70 per cent of the

respondents were engaged with agriculture, 51.53 per cent of the respondents were engaged with Agriculture + Labour, 17.70 per cent of the respondents were engaged with Agriculture + Business and only 03.07 per cent of the respondents were engaged with Agriculture + Service. It was found that majority (40.01%) of the respondents were living in Semi-Cemented houses. It revealed that 50.00 per cent of the respondents have less than 1acre of land holding, 30.76 per cent of the respondents have 1-2 acre of land holding and 19.23 per cent of the respondents have more than 2acre of land holding. It shows that 41.54 per cent of the respondents are living in a joint family whereas 58.46 per cent of the respondents are living in nu-clear family. It stated that 25.38 per cent of the respondents had low level of extension contact, 56.92 per cent of the respondents had medium level of extension contact and 17.70 per cent of the respondents had high level of extension contact. It was observed that majority (47.70%) of the respondents had low level of mass media exposure, 42.30 per cent of the respondents have medium level of mass media exposure, 10.00 per cent of the respondents have high level of mass media exposure. It also found that majority (87.69%) of the respondents had medium level of social participation, 3.85 per cent of the respondents had low level of social participation and 8.46 per cent of the respondents had high level of social participation. It also found that majority (51.54%) of the respondents had medium level of sources of agricultural, 35.38 per cent of the respondents had low level of sources of agricultural and 13.07 per cent of the respondents had high level of sources of agricultural. It revealed that majority (58.46%) of the respondent had medium level of risk orientation, 33.85 percent of the respondents had high level of risk orientation and 07.69 per cent of the respondents had low level of risk orientation. Similar findings is also reported by Devi *et al.,* (2020) [2].

Knowledge of improved French bean cultivation Practices

Table 2: Over all distribution of the respondents based on knowledge.

SI. No	Category	Frequency	Percentage
1	Low (31-36)	21	16.15
2	Medium (37-43)	73	56.15
3	High (44-48)	36	27.70

From the above table it reveals that majority (56.15%) of the respondents had medium level of knowledge about French bean cultivations followed by 27.70 percent of the respondents had high level of knowledge and 16.15 percent of the respondents had low level of knowledge toward French bean cultivations.

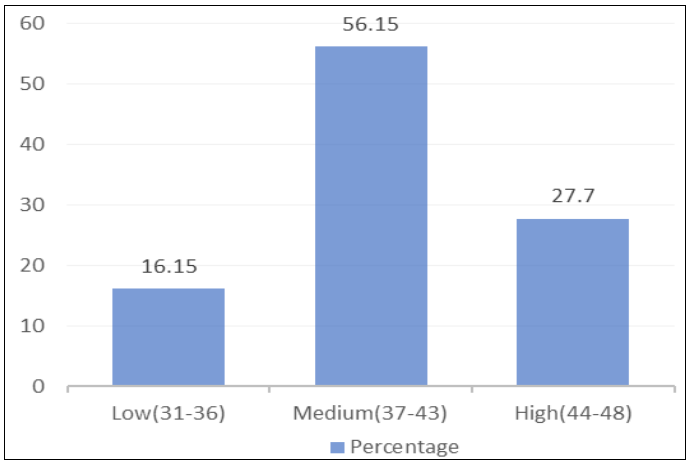

Fig 1: Over all distribution of the respondents based on the knowledge level of improved French bean cultivation practices.

Association between selected independent variables with the knowledge of the respondents towards French bean cultivation practices.

Table 3: Association between selected independent variables and knowledge:

SI. No.	Variables	Correlation Coefficient
1	Age	0.1730*
2	Education	0.9987**
3	Annual income	0.9267**
4	Occupation	0.8388**
5	Type of house	0.9953**
6	Land holding	0.9953**
7	Family type	1.0015
8	Extension contact	0.8915**
9	Mass media exposure	0.1069*
10	Social participation	0.9725**
11	Sources of agriculture information	0.6218**
12	Risk orientation	0.9671**

The data reveled that out of the twelve independent variables, i.e, age, annual income, occupation, type of house, family type, extension contact, mass media exposure, social participation, sources of agricultural and risk orientation positively and significantly correlated with knowledge of farmers towards French bean cultivation practices whereas the independent variable of education and land holding of the respondents was availed negatively and significantly correlated with the knowledge of the farmers towards improved French bean cultivation practices.

Conclusion

It was concluded that majority of the respondents were of young age (below 35 years), most of the respondents had attained primary school, maximum number of the respondents were involved in agricultur + labour, majority of the respondents income was 48,001-96,000 rupees, majority of the respondents had > 1acre of land, majority of the respondents had medium level of extension contact, social participation, sources of agricultural information and risk orientation. Majority (56.15%) of the respondents had medium level of knowledge, followed by 27.70 per cent of the respondents had high level of knowledge and 16.15 per cent of the respondents had low level of knowledge
towards improved French bean cultivation practices. Subsequently, the independent variables, i.e.age, education, annual income, occupation, type of house, extension contact, mass media exposure, social participation, sources of agricultural information and risk orientation positively and significantly corelated with knowledge of farmers towards French bean cultivation practices.

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