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Knowledge of farmers towards improved green gram production practices in Mayurbhanj district of Odisha

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Abstract

The present study was conducted in Mayurbhanj district of Odisha to assess farmer's knowledge regarding improved green gram production practices. The researcher purposively selected 120 respondents from 6 villages under Shyamakhunta block, focusing on areas with high number of green gram growers. The study findings revealed that the majority of respondents belong to various socio-economic profiles. Most of the respondents fall within age of 36-55 years (42.50%) having highest male respondents (52.50%) belongs to OBC caste (66.67%), have family size upto 5 member (63.33%), having nuclear family type (60%), have high school (39.16%), lived in cemented house (87.56%), exclusively engaged in farming (50.75%), having income upto 48000 (58.55%). Source of information, risk bearing capacity, progressiveness and mass media exposure were at a medium level for 73.24%, 65.73%, 41.67% & 51.66% whereas scientific orientation were at a low level for 51.45%. Regarding knowledge, the study found that the highest level of knowledge was about field preparation (91.67%) and overall a majority of respondents (76.66%) have medium level of knowledge. The study also revealed significant and positive correlation between various variables and farmer's knowledge of recommended green gram production practices. Age, gender, risk bearing capacity, scientific orientation, mass media exposure had shown a highly significant correlation with knowledge towards recommended green gram production practices.

Keywords: Knowledge, improved green gram production practices

Introduction

Agriculture has always played a significant role in Indian Economy. The great significance of agriculture in the country's economy is well understood by the fact that it is the mainstay of the people. India is predominantly an agricultural country, as more than 58.00 percent of its population is living in villages and the majority of them are engaged in the agricultural enterprise. Agriculture is the backbone of our country and has a prime role in Indian economy. This sector provides livelihood to about 65 percent to 70 percent of the labour force. Agriculture not only provides food for growing population but also contributes around 14.60 percent ages of country's GDP with tremendous domestic and export potential. Green gram (*Vigna radiata* L.) is commonly known as "mung" or "mung bean". It belongs to the family Leguminosae and subfamily Papilionaceae. Green gram is a native of India and central Asia and has grown in these regions since prehistoric times. The total area covered under pulses in India was 28.63 million hectares and production was 23.22 million tones with a productivity of 811 kg/ha. The total area covered under green gram in India was 4.25 million hectares and production was 2.41 million tones with a productivity of 567 kg/ha.

Green gram is one of the important pulse crop in India. It has been stated that Green Gram is cultivated in India since ancient times. Green Gram is a native of India and Central Asia and grown in these regions since prehistoric times. It is widely cultivated in Asia including India, Pakistan, Bangladesh, Sri Lanka, Thailand, Cambodia, Vietnam etc. Green gram is commonly named as mung bean. Most important kharif season pulse crop in India. Green gram is excellent source of high quality protein. It is used as green manuring crop. It can also be used as a feed for cattle even husk of the seed can be soaked in water and used as cattle feed. Green gram is rich source of Riboflavin, Thiamine and Vitamin C. It is a leguminous crop that has capacity to fix atmospheric nitrogen (30-40 kg N/ha). It also helps in preventing soil erosion. In North India, it is cultivated in both Kharif and summer seasons and in South India, it is cultivated in rabi season. Green gram is grown in India in kharif, rabi, summer and also a catch crop between two main seasons. It is also being grown for green manure, which may be continued for grain, if rainfall is not sufficient for planting rice. It is a drought resistant crop and suitable for dryland farming. It is predominantly used as an intercrop

with crops like cotton and red gram. It is also used as intercrop with fruit crops like mango, citrus. In Odisha green gram is cultivated in the districts of Ganjam, Puri, Khordha, Cuttack, Nayagarh, Balasore, Kendrapara and Mayurbhanj. In Mayurbhanj it is mainly cultivated in the blocks of Kuliana, Bangiriposhi, Badasahi and Shyamakhunta. The biological value improves greatly, when wheat or rice is combined with green gram because of the complementary relationship of the essential amino acids such as lysine and sulphur containing amino acids methionine and cysteine. It is also used as nutritive fodder, specially for milch animals. Green gram also have medicinal properties, like curing diabetes, sexual dysfunction, nervous disorder, hair disorders, digestive system disorders and rheumatic affections. It is valued for its high digestibility and freedom from flatulence effect. Green gram is grown as sole crop, mixed crop, catch crop or sequential crop under rainfed or semi irrigated condition in kharif and spring/summer season. It is a tropical crop and it requires hot and humid climate. It can also tolerate high temperature. Pulses have excellent source of high quality protein, essential amino acids, fatty acids, minerals and vitamins for millions of Indians. In addition, pulses also play an important role in improving soil health, long term fertility and sustainability of the cropping systems. Suitable for dryland farming and predominantly used as an intercrop with other crops.

Research Methodology

The present study was conducted in Mayurbhanj district of Odisha. Atotal 120 respondents were selected from 6 villages of one block i.e., Shyamakhunta in Mayurbhanj district. Personal interview method was utilized by the investigator himself, either at their home or at their field. Descriptive research design has been used in the present study. The data collected from the respondents by using pre-structured interview schedule. Data analysis is done through frequency and percentage distribution using statistical tools. For calculating percentage, frequency was multiplied by 100 and divided by total number of respondents.

Objective

To measure the knowledge of improved green gram production practices by the respondents.

Results and Discussion

The data presented in Table 1 revealed that majority of green gram growers (42.50%) were of middle age group followed by old age group (35.83%) and young age group (21.67%). It also stated that 52.50 percent were of female and 47.50 percent were of male. Around 66.67 percent belonged to OBC category whereas 33.33 percent belonged to ST category and (63.33%) belongs to upto 5 members family size whereas (36.67%) belongs to above 5 members family size. 60 percent belongs to nuclear family type and 40 percent belongs to joint family type. Majority of the respondents were found to be literate were educated upto high school (39.16%) and intermediate (32.50%) whereas 10.83 percent were educated upto primary school and undergraduate, 1.68 percent were educated upto postgraduate and 5 percent were illiterate.

Table 1: Socio economic profile of the respondents

Sr. No	Variables	Frequency	Percentage
1	Age		
	Young (18-35)	26	21.67
	Middle (36-55)	51	42.50
	Old (Above-55)	43	35.83
2	Gender		
	Male	63	52.50
	Female	57	47.50
3	Caste		
	OBC	80	66.67
	ST	40	33.33
4	Family Size		
	Up to 5 members	76	63.33
	Above 5 members	44	36.67
5	Family Type		
	Nuclear	72	60.00
	Joint	48	40.00
6	Education		
	Illiterate	6	5.00
	Primary School	13	10.83
	High School	47	39.16
	Intermediate	39	32.50
	Undergraduate	13	10.83
	Postgraduate	2	1.68
7	House type		
	Semi-cemented	15	12.44
	Cemented	105	87.56
8	Occupation type		
	Only farming	61	50.75
	Farming + Business	34	28.33
	Farming + Service	25	20.92
9	Income		
	Upto 48000	70	58.55
	48100-96000	2	1.22
	Above 96000	47	40.23
10	Source of information		
	Low	27	23.45
	Medium	88	73.24
	High	4	3.31
11	Scientific Orientation		
	Low	62	51.45
	Medium	54	45.22
	High	4	3.33
12	Risk Bearing Capacity		
	Low	10	8.44
	Medium	79	65.73
	High	31	25.83
13	Progressiveness		
	Low	10	33.33
	Medium	50	41.67
	High	30	25.00
14	Mass Media Exposure		
	Low	53	44.16
	Medium	62	51.66
	High	5	4.18

It was revealed that majority of the respondents house were of cemented type (87.56%) whereas (12.44%) were of semi-cemented type. It was revealed that 50.75 percent of the respondents were engaged in farming, 28.33 percent 65. of the respondents were engaged in farming + business and 20.92 percent of the respondents were engaged in farming + service. It was revealed that (58.55%) of the respondents had upto 48000 income, 1.22 percent of the respondents had 48100-96000 income and 4.23 percent had upto above

96000 income. It was revealed that majority of the respondents (73.24%) had medium level of source of information having low level source of information (23.45%) and 3.31 percent of the respondents have high level of source of information. It was revealed that majority of the respondents have low level of scientific orientation (51.45%) followed by (45.22%) of the respondents having medium level of scientific orientation and 3.33 percent of the respondents having high level of scientific orientation. It was revealed that majority of the respondents have medium level of risk bearing capacity (65.73%) followed by high level of risk bearing capacity (25.83%) and 8.44 percent of the respondents having low level of risk bearing capacity. About 41.67 percent of the respondents had medium level of progressiveness followed by (33.33%) low level and (25%) high level. It was revealed that majority had medium level of mass media exposure (51.66%) followed by 44.16 percent low level and 4.18 percent high level.

Table 2: Distribution of respondents on the basis of knowledge towards improved green gram production practices

Sl. No.	Knowledge Statement	Fully Correct F%	Partially Correct F%	Not Correct F%
1.	Field Preparation	110 (91.67%)	8 (6.67%)	2 (1.66)
2.	Name of Variety used- Virat, Local-Kala Moong	68 (56.66%)	25 (20.84%)	27 (22.20%)
3.	Soil type-Hardy	111 (92.50%)	8 (6.67%)	1 (0.83%)
4.	Soil testing	2 (1.68%)	2 (1.76%)	116 (96.66%)
5.	Plant Spacing (30x10 cm)	94 (78.34%)	22 (18.33%)	4 (3.33%)
6.	Pit Size	60 (50.00%)	55 (45.84%)	5 (4.16%)
7.	Planting time (June-July, December-January)	108 (90.00%)	8 (6.66%)	4 (3.34%)
8.	Irrigation Minor includes dug wells, Shallow tube wells	8 (6.66%)	2 (1.67%)	110 (91.67%)
9.	Application of FYM 120-80-60	12 (10.00%)	4 (3.34%)	104 (86.66%)
10.	Use of Chemical fertilizer 120-80-60	5 (4.17%)	3 (2.50%)	112 (93.33%)
11.	Name of insecticides/pesticides used	2 (1.67%)	3 (2.50%)	115 (95.83%)
12.	Mulching	111 (92.50%)	7 (5.83%)	2 (1.67%)
13.	Weeding	112 (92.50%)	3 (2.50%)	5 (4.17%)
14.	Intercropping	104 (86.80%)	5 (4.10%)	11 (9.10%)
15.	Harvesting	110 (91.66%)	6 (5.00%)	4 (3.34%)
16.	Production/yield	92 (76.66%)	25 (20.84%)	3 (2.5%)
17.	Storage	55 (45.84%)	60 (50.00%)	5 (4.16%)

Distribution of respondents based on knowledge

Sl. No.	Categories	Frequency	Percentage
1.	Low (22-30)	20	16.66
2.	Medium (31-34)	92	76.66
3.	High (35-38)	8	6.68
	Total	120	100.00

An overview of Table 2 makes it clear that green gram cultivators are coming under medium level (76.66%) of overall knowledge followed by those coming under low and high (16.66%) and (6.68%) respectively with regard to knowledge towards improved green gram production practices. Similar findings were followed by Yadav *et al.*, (2013) [12].

3. Association of selected independent variables with dependent variables

Table 3: Correlation coefficient of independent variables with knowledge of respondents towards improved green gram production practices

Sl. No.	Variables	Correlation Coefficient(r)
1.	Age	0.651693*
2.	Gender	0.539351*
3.	Caste	0.132068**
4.	Family Size	0.221511**
5.	Family type	0.317015**
6.	Educational qualification	0.21476**
7.	House type	0.965116*
8.	Occupation	0.273688**
9.	Yearly income	0.327327**
10.	Source of information	0.988982*
11.	Scientific orientation	0.504196*
12.	Risk Bearing Capacity	0.907348*
13.	Progressiveness	0.924473*
14.	Mass media exposure	0.719747*

Table 3 shows that variables namely age, gender, house type, source of information, scientific orientation, risk bearing capacity, progressiveness and mass media exposure were positively and significantly correlated with knowledge of respondents towards recommended green gram production practices with 0.05% level of probability and variables like caste, family size, family type, educational qualification, occupation and yearly income was positively and significantly correlated with knowledge of respondents towards recommended green gram production practices at 0.05% level of probability. Similar findings were also reported by Boora *et al.*, (2023) [2].

Conclusion

It is concluded that majority of the respondents having middle-aged engaged in farming. Most of them were found to be literate, farming was the main occupation, earning an annual income of upto Rs. 48000. Majority of respondents belong to OBC caste with upto 5 members family type belongs to joint family type. The study reveals that farmers hold a medium knowledge level (76.66%) towards improved green gram production practices followed by low level (16.66%) and high level (6.68%). Variables namely age, gender, caste, family size, age, educational qualification, house type, occupation, source of information, scientific orientation, risk bearing capacity, mass media exposure were positively and significantly correlated with knowledge of respondents towards recommended green gram production practices at 0.01% level of probability.

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