

## Effect of Independent Variables on Knowledge Extent of Farmers about Moong Bean Cultivation

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### ABSTRACT

*This study was conducted in Malwan block of Fatehpur district by conducting personal interview with 100 respondents which were selected through random sampling technique. There were 67 percent respondents found in middle age group and observed to be literate (96%), (38%) respondents belonging to general caste, 56 per cent residing in joint families. The maximum respondents (43 %) were having medium farmers land holding and agriculture was observed as main occupations (75%). The 70 per cent respondents were found such who had family annual income Rs. 83001-220000. The majority of respondents (83%) were observed overall material possession in medium level (32 to 47 score). A maximum number of respondents were found in medium level of scientific orientation (39%), medium level of economic motivation and risk orientation with 47 per cent and 45 per cent respectively. Besides, among all 13 agricultural practices of green gram (summer season) cultivation, timely sowing (99%) were rank at 1<sup>st</sup> as far as knowledge possessed by the respondents were concerned. Out of 15 variables studied the variables i.e. Knowledge about technological practices of green gram cultivation, Annual income social participation and Extension contact was found highly significant and positively correlated with knowledge extent.*

**Key words:** Socio-economic profile, Knowledge, Communication technology etc.

### INTRODUCTION

Green gram [*Vigna radiate* (L.) Wilczek.] Belongs to family Leguminosae. It is a small, much branched herbaceous plant rarely exceeding 60 centimetre height. The botanical description of main part of green gram plant is given as:

Moong has a well-developed root system. The roots usually include a central strong tap root with numerous lateral branches

the spread out in all directions in the upper layer of soils are numerous nodules on roots. The rhizobium bacteria present in these nodules fix up atmospheric nitrogen. Stem is generally yellowish in appearance the stem is branched with granular hairs on it the main branch in green gram usually produces not more than one secondary shoot but in some types the main branches may produce numerous lateral branches.

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The leaves are trifoliate and with long petioles. The numbers as well as the size of the leaflet however vary in different types. The leaves are covered with glandular hairs. The colour of the leaves also varies some being light green while others are green of dark green certain types possess leaflets with red margins.

Moong is a winter season and summer season crop but severe cold and frost are injurious of it frost at the time of flowing results in the failure at the flowers to develop seeds or in the killing of the seeds inside the pod. It is generally grown under rain fed conditions but gives good returns in irrigated conditions as well excessive rain soon after sowing or at flowering and fruiting or hailstorms at ripening cause heavy loss. It is best suited to areas having loss. It is best suited to areas having moderate rainfall of 60-90 centimetres per annum.

Moong has been known in this country for long time. It is said to be one of the oldest pulse known and cultivated from ancient times both in Asia and in Europe. Its probable place of origin lies in Central Asia that is in the country lying to the north-west of India such as Afghanistan Persia According to vavilov moong is a native of Indian and Central Asia.

Moong is of the important pulse crops of the world cultivated over an area of 12.0 million hectares with a production of about 9.2 million tonnes of grain. The important green gram growing countries are India, Pakistan, and China. The important green gram growing ranks first in the world in respect of production as well as acre age followed by Pakistan. It is the most important pulse crop of India occupying an area of 6.3 million hectares with production of 5.1 million tonnes. The average

yield of moong in only 1200-1500 kg. Per hectare. The major moong production areas are situated in Madhya Pradesh, Rajasthan, Uttar Pradesh, Haryana, Maharashtra and Punjab Area and production of grain in various states of India are given in Appendix 13. The chromosome number is  $2n = 24$ . Where as in Fatehpur district 1035 ha. Area was under green gram cultivation and production was 540 qtl/ha. And productivity was 5.22 qtl/ha. In. Keeping in view the above facts into consideration, the present study was undertaken with following objectives:

1. To study the socio-economics profile of the respondents.
2. To study the knowledge extent of farmers about the technological green gram (summer season) cultivation practices.

## MATERIAL AND METHODS

The present study was carried out in Malwan block of Fatehpur district in Uttar Pradesh. In this block, there were 72 existing villages, out of which only five villages were selected randomly. A total numbers of 100 respondents those were selected through proportionate random sampling technique on the criteria of green gram cultivars were interviewed personally for data collection. The socio economic characteristics of the respondents were studied on basis of SES (Socio Economic Scale) with suitable modifications. The classification of the received values was done on basis of mean – S.D. (Low), mean  $\pm$  S.D. (Medium), Mean + S.D. (High) and correlation coefficient.

## RESULTS AND DISCUSSION

**Table 1: Socio-personal, economic and psychological profile of the respondents:**

N = 100

S. No.	Variables	% of the respondent	Mean	Standard Deviation	Minimum	Maximum
<b>A.</b>	<b>Age</b>					
I	Young age (Up to 33)	17	44.59	7.36	32.00	58.00
II	Middle age (34-53)	67				
III	Old age (54 and above)	16				
<b>B.</b>	<b>Education</b>					
a.	Illiterate	04				
b.	Literate	96				

I	Can read and write only	10				
II	Primary	13				
III	Middle	08				
IV	High school	25				
V	Intermediate	25				
VI	Graduate	11				
VII	Post graduate	04				
<b>C.</b>	<b>Caste category</b>					
I	General caste	38				
II	Other Backward caste	35				
III	Scheduled caste	27				
<b>D.</b>	<b>Type of family</b>					
I	Nuclear/Single family	44				
II	Joint family	56				
<b>E.</b>	<b>Size of family</b>					
I	Small (up to 6)	31	8.01	2.27	5.00	13.00
II	Medium (7-10)	49				
III	Large (11 and above)	20				
<b>F.</b>	<b>Housing pattern</b>					
I	Kachcha	03				
II	Pucca	33				
III	Mixed	64				
<b>G.</b>	<b>Size of land holding</b>					
I	Marginal (Less than 1)	16	2.35		0.80	3.95
II	Small farmers (1-2)	41				
III	Medium farmers (2-4)	43				
<b>H.</b>	<b>Occupation</b>					
I	Agriculture	75				
II	Services	22				
III	Agro based enterprise	01				
IV	Dairying	01				
V	Business	01				
<b>I.</b>	<b>Social participation</b>					
I	No participation	43				
II	Participation in one organization	57				
<b>J.</b>	<b>Family annual income (Rs.)</b>					
I	Small(up to 83000)	15	15156	68497.04	45000.00	370000.0
II	Medium(83001-220000)	70				
III	High(220001 and above)	15				
<b>K.</b>	<b>Overall materials possession</b>					
I	Low (up to 31)	5	39.59	8.24	27.00	67.00
II	Medium (32 to 47)	83				
III	High (48 and above)	12				
<b>L.</b>	<b>Economic Motivation</b>					
I	Low (up to 18)	21	20.4	2.04	15	25
II	Medium (19-21)	47				
III	High (22and above)	32				
<b>M.</b>	<b>Scientific Motivation</b>					
I	Low (up to 18)	31	19.58	1.86	15	23
II	Medium (19-20)	39				
III	High (21 and above)	30				
<b>N.</b>	<b>Risk Orientation</b>					
I	Low (up to 19)	22	21.14	2.07	15	25
II	Medium (20-22)	45				
III	High (21 and above)	33				

### Socio-economic profile of the respondents

#### (Table.1):

- A. It is apparent from the maximum number of the respondents (67%) were found in middle age group *i.e.* 34-53 years.
- B. The maximum *i.e.* 96 per cent of respondents was found literate while 04 per cent was observed illiterate.

- C. The maximum numbers of the respondents (38%) was found belonging to general caste followed by other backward caste (35%), schedule caste (27%).
- D. Joint families were more in number than Single families in terms of percentage. 56 per cent respondents belonged to joint

- families while, 44 per cent to single type of families.
- E. 49 per cent respondents were observed having 7-10 members in their families followed by 31 per cent having up to 6 members and 20 per cent having 11 and above members, respectively.
- F. The maximum numbers of respondents 64 per cent was observed mixed type housing pattern followed by 33 per cent pucca and 03 per cent kachcha type housing pattern, respectively.
- G. The maximum percentage of the respondents *i.e.* 43 per cent were observed their having medium size of land holding 2-4 hectare, 41 per cent respondents having small size of land holding 1-2 hectare and 16 per cent respondents having marginal size of land holding below 1 hectare, respectively.
- H. An over whelming majority *i.e.* 75 per cent respondents families was reported agriculture as their main occupation.
- I. A majority *i.e.* 57% of the respondents participates in one organization followed by 43% respondents did not take participation in any organization, respectively. It means that the respondents did have more interest in participating in the social organization, respectively.
- J. A maximum numbers (70%) of the respondents earned the annual income Rs. 83001-220000 while, 15% respondents earned annual income up to 83000 and Rs. 220001 and above, respectively.
- K. The majority of respondents (83%) were observed overall material possession in medium level (32 to 47 score) followed by 12% and 05% were observed high (48 and above score) and low (up to 31 score) respectively.
- L. Majority of respondents (47%) were in medium level of economic motivation followed by high and low levels, respectively.
- M. Majority of respondents (39%) were in medium level of scientific orientation followed by high and low levels, respectively.
- N. Majority of respondents (45%) were in medium level of Risk orientation followed by high and low levels, respectively.

**Table 2: Extent of knowledge about technological practices of green gram cultivation**  
N=100

S. No.	Green gram cultivation practices	No. of respondent	Percentage
1.	High yielding varieties		
a.	Pusa Baisakhi	65	65.00
b.	Type-44	59	59.00
c.	K-4	57	57.00
d.	Sheela	60	60.00
2.	First ploughing done for cultivation	78	78.00
3.	Much ploughing are required before sowing	45	45.00
4.	Recommended Seed rate	81	81.00
5.	FIR(Fungicide, Insecticide, Rhizobium) culture		
a.	Recommended dose of Fungicide	45	45.00
b.	Recommended dose of Insecticide	55	55.00
c.	Recommended dose of Rhizobium	83	83.00
6.	Time of seed treatment	73	73.00
7.	Timely sowing	99	99.00
8.	Recommended dose of Fertilizers	65	65.00
9.	Irrigation management	94	94.00
10.	Intercultural operation	86	86.00
11.	Insect/Pest management	70	70.00
12.	Disease management	68	68.00
13.	Best time for Harvesting	88	88.00
	<b>Overall percentage</b>		<b>70.61</b>

It is obvious from the Table-5.2.1. That among all 13 technological practices of green gram cultivation, timely sowing (99%) as far as knowledge possessed by the respondents was concerned. The practice irrigation management (94%), followed by best time for harvesting (88%), intercultural operation (86%), recommended dose of rhizobium culture (83%), recommended seed rate (81%), first ploughing done for cultivation (78%), time of seed treatment (73%), insect/Pest management (70%), disease management

(68%), recommended dose of fertilizers, high yielding variety pusa baisakhi each (65%), high yielding variety sheela (60%), high yielding variety Type-44 (59%), high yielding variety K-4 (57%), recommended dose of insecticide (55%), recommended dose of fungicide (45%), much ploughing are required before sowing (45%). The overall knowledge index was calculated to be 70.61%. It can be calculated that the extent of knowledge about technological practices of green gram cultivation seems to be satisfactory.

**Table 3: Correlation coefficient (r) between different Independent variables and Knowledge about technological practices of green gram cultivation**

S. No.	Independent Variable	Correlation Coefficient
1.	Age	0.114898
2.	Education	0.148629
3.	Caste	-0.01182
4.	Type of family	0.132791
5.	Size of family	0.137262
6.	Size of land holding	0.06522
7.	Occupation	-0.12903
8.	<b>Annual income</b>	<b>0.470391**</b>
9.	<b>Social participation</b>	<b>0.510881**</b>
10.	Housing pattern	0.021922
11.	Material possession	0.158554
12.	Economic motivation	0.254659*
13.	<b>Extension contact</b>	<b>0.289202**</b>
14.	Risk orientation	0.112308
15.	Scientific orientation	0.070131

\*Significant at 0.05% probability level

\*\* Significant at 0.01% probability level

Table-5.5.1 focuses that out of 15 variables studied, the variables i.e. adoption extent of annual income, social participation and extension contact were found highly significant and positively correlated with knowledge extent. The variable like economic motivation was found significant and positively correlated. The variable like age,

education, type of family, and size of family, size of land holding, housing pattern, material possession, risk orientation, and scientific orientation were found positively correlated knowledge extent. The variable like caste and occupation were found negatively correlated knowledge extent. Those variables which showed the positive and significant

relationship had direct influence over knowledge extent about annual income, social participation and extension contact. It means that if the values of these variable increases, the knowledge extent of technological practices was also increase.

### CONCLUSION

On the basis of the findings, it may be concluded that majority of the respondents were middle aged, literate, belonged to general caste, joint families, earned annual income Rs. 830011-220000, having medium size land holding, reported agriculture as their main occupation and having participation in one social organizations. The gram pradhan followed by kisan sahayak in case of formal sources of information, family members followed by friends in case of informal sources and T.V. followed by news bulletin in case of mass media were found important sources of information about green gram growing production. The overall mean of scores for formal, informal and mass media exposure was found to be 7.06, which may be considered as good contact with information sources. The medium level of overall material possession, scientific orientation, economic motivation and risk orientation was observed of the respondents. Besides, among all 13 technological practices of green gram cultivation, time of sowing (99%) were rank at 1<sup>st</sup> as far as knowledge possessed by the respondents were concerned. Out of 15 variables with knowledge, three variables like annual income, social participation and extension contact were found highly significant and positive correlated, respectively.

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