



# Knowledge of the Farmers toward Improved Pigeon Pea Cultivation Practices in Gopalganj District of Bihar in India

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

The present study was undertaken to assess the knowledge of farmers towards improved Pigeon pea cultivation practices in Gopalganj district of Bihar, during year 2021-22. The data were collected through pre-tested interview schedule form 120 respondents which were selected randomly. The collected data were tabulated, analyzed and interpreted with the help of appropriate statistical analysis was done to find out meaningful results. The study revealed that maximum number of respondents were middle aged with 54.17 per cent, 59.16 respondents had marginal land holding, The maximum number of respondents having medium level scientific orientation, mass media exposure, extension contact and 60.84 per cent of the respondents had medium level of knowledge about pigeon pea cultivation practices. Respondents had maximum knowledge about

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soil type, varieties, season of growing and harvesting etc and they had less knowledge about seed treatment with fungicide, spacing, inter cultivation etc and age, caste, source of information, scientific orientation, mass media exposure and risk orientation were positively and significantly correlated with knowledge of pigeon pea grower.

**Keywords:** Knowledge; farmer improved pigeon pea; cultivation practices.

## 1. INTRODUCTION

Agriculture plays a vital role in the Indian economy. Over 70 per cent of the rural households depend on agriculture. Agriculture is the most important sector of Indian Economy. Indian agriculture sector accounts for 18 per cent of India's Gross domestic Product (GDP) and provides employment to 50% of the countries workforce, reported by the Food and Agriculture Organization (FAO) [1].

### 1.1 About Pigeon Pea

Pigeon pea (*Cajanus cajan*) is an important multi- use shrub legume of the tropic and sub-tropic regions. The crop originated from India and moved to Africa about 4,000 years ago.

Unlike other grain legumes, pigeon pea production is concentrated in developing countries, particularly in a few South and Southeast Asia and Eastern and Southern African countries. It is the preferred pulse crop in dry land areas where it is inter- cropped or grown in mixed cropping systems with cereals or other short duration annuals [2].

Pigeon pea seed is made up of 85 per cent cotyledon, 14 per cent seed coat and 1 per cent embryo. It is a rich source of protein, carbohydrates, minerals and vitamins. Protein content of pigeon pea ranges between 20-22 per

cent, carbohydrate between 51.4 – 58.8 per cent, Crude fiber between 1.2 – 8.1 cent and lipid between 0.6 – 3.8 per cent [3].

Pulses cultivation is an important part of Bihar's agriculture sector, providing livelihoods to millions of farmers in the state. The government's initiatives and schemes have helped promote the adoption of modern technologies and better agricultural practices, improve market access, and provide financial support to farmers engaged in pulses cultivation. However, there is still much work to be done to address the challenges faced by the farmers and ensure sustainable growth in the future.

## 2. MATERIALS AND METHODS

The Present study was concluded in Gopalganj district of Bihar start during the year 2021-22. Gopalganj district was purposively selected for the study. In Hathuwa block which was selected purposively and 6 villages were selected randomly for study. A total of 120 Pigeon pea growers constituted sample for the investigation. Based on the objectives of the study, an interview schedule was prepared. The information was elucidated from respondents with the help of pre structured interview scheduled. The information was collected by personally and appropriate statistics were used to analysis of data.

## 3. RESULTS AND DISCUSSION

**Table 1. Socio economic profile of the respondents**

S. no.	Variables	Frequency	Percentage
<b>01.</b>	<b>Age</b>		
	Young (18-35)	16	13.33
	Middle (36-55)	86	71.67
	Old (56 and above)	18	15.00
<b>02.</b>	<b>Education</b>		
	Illiterate	55	45.80
	Primary school education	15	12.50
	High school education	26	21.70
	Intermediate	15	12.50

S. no.	Variables	Frequency	Percentage
	Graduate	9	07.50
<b>03.</b>	<b>Family type</b>		
	Nuclear	93	77.50
	Joint	27	22.50
<b>04.</b>	<b>Occupation</b>		
	Agriculture only	76	63.33
	Agri + Agri labour	12	10.00
	Agri + business	23	19.17
	Agri + Service	9	07.50
<b>05.</b>	<b>Land holding</b>		
	Marginal	71	59.17
	Small	40	33.33
	Medium	07	05.83
	Large	02	01.67
<b>06.</b>	<b>Annual income</b>		
	Low (>50k)	66	55.00
	Medium (50- 1lakh)	24	20.00
	High (1lakh & above)	30	25.00
<b>07.</b>	<b>Source of Information</b>		
	Low(16-19)	30	25.00
	Medium (20-21)	52	43.33
	High (22-24)	38	31.67
<b>08.</b>	<b>Scientific orientation</b>		
	Low(14-15)	40	33.33
	Med(16)	65	54.17
	High(17)	15	12.50
<b>09.</b>	<b>Mass media exposure</b>		
	Low (6-8)	46	38.33
	Medium (9-11)	70	58.34
	High (12-13)	04	03.33
<b>10.</b>	<b>Risk orientation</b>		
	Low (12-14)	54	45.00
	Medium (15-16)	60	50.00
	High (16-18)	06	05.00

A majority of the respondent (71.67%) of were from the middle age group, Similar finding was also reported by Poshia, et. al. [4], 54.2 per cent were literate while 45.80 % of illiterate, majority of the respondents were doing Agriculture i.e 63.33 per cent, with 59.16 per cent of farmer had marginal land holding, 55% of respondents had low income. It reveals

that 43.33 per cent of respondents have medium source of information, Maximum farmer had medium level of Scientific orientation i.e 54.17% and it is evident that the majority of farmers, accounting for 58.33per cent, had a high level of mass media exposure. Similar finding was also reported by Melkar and Mazhar [5].

**Table 2. Distribution of respondents based on Extent of Knowledge**

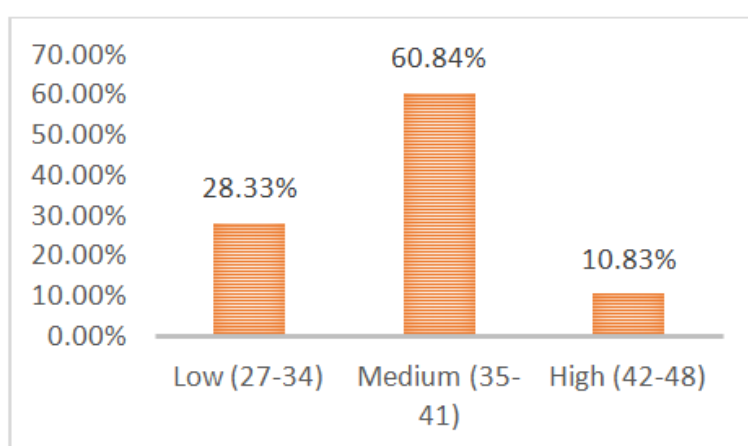
S. no.	Statements	Evaluation		
		FC F(%)	PC F(%)	NC F(%)
<b>1</b>	Soil type	108 (90%)	12 (10%)	0 (0%)
<b>2</b>	Varieties	102 (85%)	15 (0%)	0 (0%)
<b>3</b>	Season of growing	112 (93.33%)	08 (6.67%)	0 (0%)

S. no.	Statements	Evaluation		
		FC F(%)	PC F(%)	NC F(%)
4	Sowing time	98 (81.60%)	13 (10.83%)	09 (7.5%)
5	Procedure of sowing	28 (23.33%)	51 (42.5%)	41 (34.16%)
6	Spacing	24 (20.00%)	09 (7.5%)	87 (72.50%)
7	Seed rate	70 (58.33%)	36 (30.00%)	14 (11.67%)
8	Plant protection	62 (51.7%)	58 (48.33%)	0 (0%)
9	Farm yard manure	16 (13.33%)	39 (32.5%)	65 (54.17%)
10	Procedure of sowing	28 (23.33%)	51 (42.5%)	41 (34.16%)
11	Inter-cropping	10 (8.33%)	37 30.08%)	73 (60.83)
12	Seed treatment with fungicides	22 (18.33%)	25 (20.8%)	73 (60%)
13	Weed management	112 (93.34%)	07 (5.83%)	1 (0.83%)
14	Knowledge about insect and pest	91 (75.84)	18 (15%)	11 (9.16%)
15	Pest management	42 (35%)	43 (35.83%)	35 (29.17%)
16	Insect management	39 (32.5%)	48 (40%)	33 (27.5%)
17	Harvesting	113 (91.46%)	07 (5.83%)	0 (0%)

**Table 3. Overall level of knowledge of respondents toward improved Pigeon pea cultivation practices**

Sr. no.	Category	Frequency	Percentage
1	Low (24-31)	34	28.33
2	Medium (32-38)	73	60.84
3	High (39-45)	13	10.83
<b>Total</b>		<b>120</b>	<b>100</b>

The data presented in Table 3 indicated that 60.84% of the respondents had a medium level of knowledge about Pigeon pea production practices. A significant proportion of Pigeon pea farmers, approximately 28.33%, had a low level of knowledge, while 10.83% of the surveyed farmers had a high level of knowledge about Pigeon pea practices similar finding by Chahande and Ghadge [6], Pamditrao [7]



**Fig. 1. Distribution of the respondents on the basis of Knowledge level of farmers about Pigeon pea practices**

**Table 4. Relationship between personal profile and knowledge level of respondents**

S. no	Independent Variable	Correlation Coefficient
1	Age	0.929*
2	Caste	0.994*
3	Gender	0.115(NS)
4	Educational Qualification	0.396**
5	Marital status	0.098(NS)
6	Family type	0.114(NS)
7	Land holding	0.130(NS)
8	Income	0.299**
10	Source of Information	0.752*
11	Scientific Orientation	0.985*
12	Mass Media exposure	0.946*
13	Risk orientation	0.828*

\*= Correlation is significant at the 0.01% level of probability; \*\*= Correlation is significant at the 0.05% level of probability; NS= Non-significant

According to Table 4 Concluded that independent variable educational qualification and family type positively and significantly correlated at 0.05 per cent level of probability and age, caste, income, source of information, scientific orientation, mass media exposure and risk orientation were positively and significantly correlated with knowledge of the respondents at 0.01% probability. Therefore null hypothesis were rejected for gender, marital status and land holding were not significantly correlated with knowledge about Pigeon pea grower at 0.05% of probability.

#### 4. CONCLUSION

It was concluded that most of the respondents belonged to the middle age group, literate respondent and nuclear family. The respondents were dependent for their livelihood on Agriculture. The maximum number of respondents having medium level scientific orientation, mass media exposure, extension contact and knowledge level in the study area and some independent variables like age, caste, source of information, scientific orientation, mass media exposure and risk orientation were positively and significantly correlated with knowledge with pigeon pea grower at 0.01% probability similar finding by R.K Meena [8]. The government should formulate the appropriate extension strategy to increase the knowledge and adoption behaviour of farmers towards improved Pigeon pea cultivation practices.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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