Asian Journal of Agricultural Extension, Economics & Sociology

Volume 41, Issue 8, Page 25-31, 2023; Article no.AJAEES.100888
ISSN: 2320-7027

Knowledge of the Farmers towards Recommended Jute Production Practices in Burdwan District of West Bengal, India

Swapna Deep Pal [a++*] and Dipak Kumar Bose [a#]

[a] *Department of Agricultural Extension and Communication, SHUATS, Prayagraj-211007, India.*

Authors' contributions

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

Article Information

DOI: 10.9734/AJAEES/2023/v41i81975

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/100888

Original Research Article

Received: 19/03/2023
Accepted: 28/05/2023
Published: 29/05/2023

ABSTRACT

The study has been done in Burdwan district of West Bengal. The study has been conducted to measure the extent of Adoption Behaviour of farmers towards improved Jute Production Practices in Burdwan District of West Bengal. Based on the highest number of jute growers in the villages, a total of 120 respondents were purposely chosen from seven villages within the Kalna 1 and Kalna 2 block. The data has been collected through pre tested schedule and has been analyzed with proper statistical tools and techniques. According to the research, the majority of respondents (45.00%) were in the middle age range. According to all of the study's independent variables, the majority of respondents 72.50 percent had a medium degree of knowledge about the production technology for the jute crop. These respondents were followed by 18.33 and 9.17 percent of respondents with low and high levels of knowledge, respectively. Age, educational qualification, annual income, extension contact, mass media exposure, scientific orientation, risk orientation, were positively and

[++] *Research Scholar;*
[#] *Associate Professor;*
**Corresponding author: E-mail: rijurock25@gmail.com;*

significantly and however the variables types of family, occupation and land holding were non-significantly correlated and the variable house type was positively and significantly correlated with the knowledge with level of knowledge of farmers toward improved jute production practices.

Keywords: Knowledge; jute production techniques; mass media exposure; risk orientation.

1. INTRODUCTION

"Jute (*Corchorus olitorius* and *Corchorus capsularies*) is regarded as the India's golden fiber and is predominantly grown by the farmers of Eastern India especially in West Bengal, Odisha, Bihar, Assam and Uttar Pradesh in about 0.8 mha area. West Bengal is the major jute growing state sharing about three- fourth of the country's production" (Roy, 2017). "The importance of the jute sector to the India economy, in particular, cannot be overstated; it is a major cash crop for over three million small farm households. Also, it's the largest industry, producing about one-third of manufacturing output, and is the largest agricultural export commodity in India. The livelihood of about 40 million people is dependent on jute - related activities" (Roy, 2017).

"It is one of the few crops which can be grown in the monsoon season and can be rotated with rice to restore the soil fertility and structure. The leaves of jute plants enrich the fertility of the soil for sustained agriculture and have good nutrition value as vegetables. Jute fibre is 100 percent bio-degradable and recyclable and thus environmentally friendly" (Moazzem, 2010).

The fiber is extracted from the two species namely as *Corchorus olitorius L* (Tossa Jute) and *Corchorus capsularis L* (White Jute). Till early seventies, white jute varieties occupied more than 80% of the jute growing areas sowing time mainly from mid-march to mid-april. Development of pre-mature flowering resistant jute variety named "JRO 878", "JRO 7835" and "JRO 524" in 1967, 1971 and 1977, respectively, enable the tossa jute to be sown early and to be fitted before kharif season in the rice based cropping sequence of eastern India. As a result 80% of the jute area comes under tossa jute owing to its higher fibre yield.

"Jute requires a warm and humid climate and can be grown with a temperature range of 24°C and 37°C and a relative humidity of 57% to 97%. Jute crop thrives well with alternate rains and sunshine. The amount of rainfall and its distribution effects the growth and ultimately the yield of the fiber. In the ideal situation 150 mm of pre monsoon rainfall before 30-40 days of dry period and 1200-1500 mm of precipitation over 75-80 days is considered to be the ideal growth for the growth of the jute crop. Jute grows well in the alluvial soils having high slit content as well as in other types of soil also. In India it is mainly grown in red and lateritic, calcareous soil. Acidic to neutral soil is suitable for jute cultivation" [1-3].

"West Bengal is the major jute growing state sharing about three- fourth of the country's production. The importance of the jute sector to the India economy, in particular, cannot be over stated, it is a major cash crop for over three million small farm households" [4].

"West Bengal has largest industry, producing about one-third of manufacturing output, and is the largest agricultural export commodity in India. The livelihood of about 40 million people is dependent on jute - related activities. It is one of the few crops which can be grown in the monsoon season and can be rotated with rice to restore the soil fertility and structure. The leaves of jute plants enrich the fertility of the soil for sustained agriculture and have good nutrition value as vegetables. Jute fiber is 100 percent bio-degradable and recyclable and thus environmentally friendly" [5].

2. RESEARCH METHODOLOGY

Descriptive research design was used for the study as it describes the characters that are being studied. The present study has been conducted in Burdwan district of West Bengal. Out of 23 blocks in Burdwan district, Kalna 1 and Kalna 2 block has been chosen purposively based on the maximum number of Jute growers among the all blocks of the district. From selected block, seven villages were selected randomly and from there a total number of 120 respondents were selected through proportionate sampling method who were growing maximum quantity of Jute.

2.1 Objectives of the Study

1- To assess the socio-economic profile of the respondents.

2- To determine the extent of knowledge of the recommended jute production practices by the respondents.

3. RESULTS AND DISCUSSION

From the Table 1, it shows that 45.00 per cent of the respondents belong to the middle age group. It is clearly visible that 33.33 per cent of the respondents are illiterate. It can be significantly seen that majority of the respondents i.e. 65.83 per cent are having only agriculture only as their occupation. It is obtained from the table that 44.17 per cent of the respondents live in Semi-cemented houses. In terms of land holding 58.33 per cent of the respondent has marginal i.e. <1 ha. land and 39.17 per cent of the respondents has medium level of annual income (i.e 40000/- to 80000/-). It is also evident that 56.67 per cent of the respondents had medium level of extension contact. It is clearly visible in table that 52.50 per cent of the respondents have medium level of scientific orientation and 47.50 per cent of the respondents have medium level of mass media exposure. It is depicted that 59.17 percent of the respondent showed medium level of economic motivation and 41.67 per cent of the respondents showed medium level of risk orientation. Similar finding was also reported by Kumari and Laxmikant [6].

Table 1. Socio-economic profile of the respondents

Sl. No.	Independent variables	Category	Frequency	Percentage
1.	Age	Young (Below 35 years)	45	37.50
		Middle(36-55 years)	54	45.00
		Old (above 55 years)	21	17.50
2.	Education	Illiterate	40	33.33
		Primary School	30	25.00
		High School	27	22.50
		Intermediate	12	10.00
		Graduate & above	11	9.17
3	Occupation	Only Agriculture	79	65.83
		Agriculture & Business	35	29.17
		Agriculture & Service	06	5.00
4	Types of Family	Nuclear	86	71.67
		Joint	34	28.33
5	Types of house	Hut (Kuchha)	18	15.00
		Semi-cemented	53	44.17
		Cemented	49	40.83
6	Land holding	Marginal (<1 ha.)	70	58.33
		Small (1.0 ha - 2.0 ha)	38	31.67
		Medium(2.0 ha - 4.0 ha)	12	10.00
7	Annual income	Low (Upto 40000/-)	43	35.83
		Medium (40000/- to 80000/-)	47	39.17
		High (Above 80000/-)	30	25.00
8	Extension contacts	Low	27	22.50
		Medium	68	56.67
		High	25	20.83
9	Scientific orientation	Low (8 – 11)	53	44.17
		Medium(12 – 14)	63	52.50
		High(15 – 17)	4	3.33
10	Mass Media Exposure	Low (16 – 20)	52	43.33
		Medium (21 – 24)	57	47.50
		High (25 - 28)	11	9.17
11	Economic motivation	Low (10 – 12)	28	23.33
		Medium (13 – 14)	71	59.17
		High (15 – 16)	21	17.50
12	Risk Orientation	Low (6-9)	27	22.50
		Medium (10 – 12)	50	41.67
		High (13 – 15)	43	35.83

Table 2. Knowledge of farmers towards improved jute production technology

S. No.	Statements	Evaluation		
		Fully Correct F(%)	Partially Correct F(%)	Not Correct F(%)
01	Alluvial/loamy drained soil is suitable for the jute crop	58 (48.33%)	55 (45.83%)	7 (5.84%)
02	Field with a fine tilth for jute crop is suitable	74 (61.67%)	37 (30.83%)	9 (7.50%)
03	Knowledge about the correct time for harvesting	105 (87.50%)	15 (12.50%)	0 (0%)
04	Knowledge about the Varieties of jute in your fields	0 (100%)	47 (39.17%)	73 (60.83%)
05	Seed treatment is necessary in jute seed	36 (30.00%)	63 (52.50%)	21 (17.50%)
06	Knowledge about appropriate sowing time in zaid season for the jute crop in March	114 (95.00%)	5 (4.16%)	1 (0.83%)
07	Knowledge about the various spacing distance for different sowing techniques	2 (1.67%)	50 (41.66%)	68 (56.67%)
08	Bringing the seeds from KVK or Other research station.	1 (0.83%)	3 (2.50%)	116 (96.67%)
09	Using 5-7 kg/ha. Seed for olitorius variety Using 7-10 kg/ha seed for capsularis variety	16 (13.33%)	95 (79.17%)	9 (7.50%)
10	Maintaining a spacing distance of 25*5 cm for olitorius variety Maintaining a spacing distance of 30*5 cm for capsularis variety	9 (7.50%)	66 (55.00%)	45 (37.50%)
11	Application of 20:20:20kg N: P: K/ha. Application of 5 tonnes of FYM during last ploughing	33 (27.50)	39 (32.50%)	48 (40.00%)
12	Hand weeding after 20-25 and 35-40 days of sowing Application of fluchloralin @ 1.5 Kg/ha after 3 days of sowing	23 (19.17%)	52 (43.33%)	45 (37.50%)
13	Irrigation done once in 15 days or regularly	9 (7.50%)	30 (25.00%)	81 (67.50%)
14	Controlling of the pest done through spraying of Phoslane 0.07% or Endosulfan 0.07% or Cypermethrin 0.05%	55 (45.83%)	56 (46.67%)	9 (7.50%)
15	Harvesting of the crop done after 100 to 110 days after sowing	114 (95.00%)	6 (5.00%)	0 (0%)
16	Getting a plant yield of 45-50t/ha. and 2-2.5 t/ha of fibre yield	36 (30.00%)	75 (62.50%)	9 (7.50%)
17	Drying it naturally after harvesting	114 (95.00%)	6 (5.00%)	0 (0%)

The above Table 2 proves that a majority among the respondents 72.50 per cent belongs Medium level of knowledge towards improved Jute production technology. 48.33 per cent of the respondents fully agreed that the alluvial/loamy drained soil is suitable for jute crop. 61.67 per cent of the respondents, agrees that soil with fine tilth is suitable for jute production. Among 120 respondents 87.50 per cent of them know the correct time of harvesting. 60.83 per cent of the respondents don't know about the high yielding varieties. 52.50 per cent of the respondents partially agreed that seed treatment is necessary in jute seeds. 95.00 per cent of the respondents agreed on knowing the right time of seed sowing in March. 56.67 per cent of the respondents were disagreed about different sowing techniques [7-11]. 96.67 per cent of the respondents disagreed about collecting the jute seed from KVKs or any other research station and 79.17 per cent of the respondents partially agreed about appropriate seed rate for both olitorius and capsularis varieties. 55.00 per cent of the respondents were partially agreed about appropriate seed spacing distance for both olitorius and capsularis varieties. 40.00 per cent of the respondents were disagreed on applying the appropriate doses of fertilizer in optimum amount. 43.33 per cent of the respondents were partially agreed about weeding and interculturing. 67.50 per cent of the respondents disagreed about the irrigation timing for the crops. 46.67 per cent of the respondents partially agree on using chemicals such as phoslane, endosulfan and cypermethrin as pesticides. 95.00 per cent respondents fully agreed on having the knowledge of appropriate harvesting time. 62.50 per cent respondents partially agree on achieving the crop yield up to 45-50 t/ha and the fibre yield up to 2-2.5 t/ha. 95.00 per cent respondent fully agreed on the drying the crop naturally under the sun.

Table 3, reveals that 72.50 per cent of the respondents had medium level of knowledge towards improved Jute production technology. Considerable percentage of respondents were found having low level 18.33 per cent and high level 9.17 per cent of knowledge respectively.

Table 3. Distribution of respondents according to their overall knowledge level

S. No.	Category	Number	Percentage
1.	Low level knowledge (29 – 34)	22	18.33
2.	Medium level knowledge (35 – 39)	87	72.50
3.	High level knowledge (40 – 44)	11	9.17
	Total	120	100.00

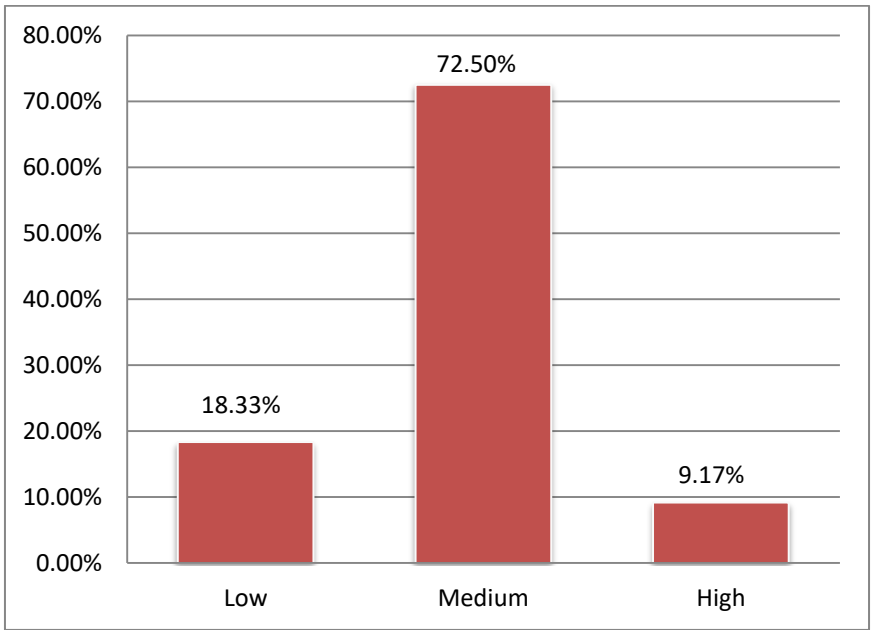

Fig. 1. Distribution of respondents according to their overall knowledge towards improved jute production technology

Table 4. Correlation coefficient (r) between different independent variables and knowledge about improved jute production practices

Sl. No.	Independent Variable	Correlation coefficient
1.	Age	0.798*
2.	Educational Qualification	0.925*
3.	Types of family	0.014NS
4.	Types of houses	0.474**
5.	Annual Income	0.773*
6.	Occupation	0.016NS
7.	Land Holding	0.074NS
8.	Extension Contact	0.995*
9.	Mass Media Exposure	0.686*
10.	Scientific Orientation	0.729*
11.	Risk Orientation	0.637*

= Correlation is significant at the 0.01% level of probability
**= Correlation is significant at the 0.05% level of probability*

From this above Table 4 concluded that the independent variables i.e. Age, educational qualification, annual income, extension contact, mass media exposure, scientific orientation, risk orientation, were positively and significantly correlated with level of knowledge of farmers toward improved jute production practices measures at 0.01 percent of probability, As a result, the null hypothesis was rejected for these variables, however the variables types of family, occupation and land holding were non-significantly correlated with level of knowledge of farmers toward improved jute production practices measures between 0.01 and 0.05 percent of probability and the variable house type was positively and significantly correlated with the knowledge at 0.05% of probability. The finding is supporting the findings of Singh et al. (2014).

4. CONCLUSION

It is concluded that majority of the respondents were engaged in farming, literate having less annual income belongs to nuclear families and having medium level of risk bearing capacity lives in semi cemented houses. The maximum numbers of the respondents have a medium level of knowledge regarding improved jute production practices. The independent variables like Age, educational qualification, types of houses, annual income, extension contact, mass media exposure, scientific orientation, risk orientation have positive and significant effect on the knowledge of respondents. The major constraint faced by the respondents was higher labour charges and non availability of labours in right time and they suggested that the labour charges should be less.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mahapatra BS, Mitra S, Kumar M, Ghorai AK, Sarkar SK, Kar CS, Kundu DK, Satpathy S, Karmakar PG. An overview of research and development in jute and allied fibre crops in India. Indian Journal of Agronomy. 2012;57(3s):72-82.
2. Sarker UK, Kaysar MS, Uddin MR, Hossain MA, Hassan S, Hassan MM. Exploring farmers' insight on cropping pattern for sustainable crop production in char area of Bangladesh. Sustainability. 2022;14(3):1745.
3. Chatterjee D, Acharya SK, Mondal S. Socio-psychological Determinants for Technology Socialisation of Jute Production in West Bengal. Indian Journal of Extension Education. 2022;58(3):175-8
4. Saha A, Swaminathan M. Agricultural growth in West Bengal in the 1980s: A disaggregation by districts and crops. Economic and political Weekly. 1994: A2-11.
5. Mitra B, Bhattacharya PM, Sinha AK, Chatterjee R, Chowdhury AK. Zero tillage Technology in Jute Cultivation: a successful venture in West Bengal. Int. J. Curr. Microbiol. Appl. Sci. 2020;9(5): 2068-75.
6. Kumari K, Devegowda SR, Khuswaha S. Trend analysis of area production and productivity of jute in India. The Pharma Innovation Journal. 2018;7(12): 58-62.

7. Annual Report. Status of Jute Production in India, ICAR-Central Institute of Jute And Allied Fibre, Barrackpore, West Bengal. 2017-2018;1(2): 9-15.
8. Baraker SK, Lalitha KC, Manjunath KV, Reddy AD. Constraints and Suggestions in Production and Marketing of Onion in Gadag District of Karnataka, India, Int. J. Curr. Microbiol. App. Sci. 2020;9(9):3155-3161.
9. Kumar B. Ashok, Tulasiram J, Maraddi GN, Basavaraj Hulagur. A study on adoption level of recommended cultivation practices of blackgram growers in North Eastern Karnataka, India. International Journal of Current Microbiology and Applied Sciences. 2018; 7(2):2319-7706.
10. Kiconco S, Babu SC, Akankwasa K. Adoption patterns and intensity for multiple banana technologies in Uganda. Sustainability. 2022;14(23):15986.
11. Kumar R, Ansari MN, Kumar N, Kumar B. Constraints perceived by the papaya growers in adoption of improved papaya production technology in Begusarai district of Bihar, India. Int. J. Curr. Microbiol. App. Sci. 2018;7(6):2590-2595.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/100888