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Knowledge of the farmers towards improved Sugarcane production practices in Meerut district of Western Uttar Pradesh

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Abstract

The study was conducted in Meerut District of Uttar Pradesh to measure the adoption of farmers towards improved Sugarcane production practice. A total number of 120 respondents were selected purposively from five villages under Daurala block of Meerut of Uttar Pradesh due to high area covered. The data were collected through interview method by using pre structured interview schedule and later appropriate statistical analysis was done to draw logical conclusion. The study revealed that 48.33 percent of the respondents belonged to the middle aged group and majority of the respondents belong to medium level size of land holding. The finding also revealed that 57.50 percent of the respondents had medium level of Knowledge towards improved sugarcane production practice followed by 17.50 percent and 25.00 percent of the respondents with low and high level of Knowledge respectively.

Keywords: Knowledge, sugarcane production practice

Introduction

Sugarcane (*Saccharum officinarum* L.) is an important commercial crop of India. Sugarcane and sugar beet are used for large scale production of sugar in the world. Amongst the sugar producing plants, sugarcane is responsible for about 60.00 percent of world's sugar production. Sugarcane is cultivated mainly in the tropics, though in India it is also grown in sub-tropical areas. Sugarcane is the main source of sugar in Asia and Europe. It is grown primarily in the tropical and sub-tropical zones of the southern hemisphere. Sugarcane is the raw material for the production of white sugar, jaggery (gur) and khandasari. It is also used for chewing and extraction of juice for beverage purpose.

The sugarcane cultivation and sugar industry in India plays a vital role towards socio-economic development in the rural areas by mobilizing rural resources and generating higher income and employment opportunities. About 7.5 percent of the rural population, covering about 45 million sugarcane farmers, their dependents and a large number of agricultural labour are involved in sugarcane cultivation, harvesting and ancillary activities. There are about nine States in India where sugarcane is grown on a large extent of area. There are number of varieties that are grown in India depending on the suitability of the soil. The area, output and yield and sugarcane cultivation is subjected to fluctuate in response to policies of the government and also conditions of cultivation.

Research Methodology

Descriptive research design was adopted for the study as it describes the characteristics or phenomena that are being studied. The present study was conducted in Daurala block Meerut district of Uttar Pradesh. Covering one block and five villages which are selected purposively based on maximum area under sugarcane cultivation.

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Results and Discussion**Table 1:** Socio-economic profile of the respondents

S. No	Independent variables	Category	Frequency	Percentage
1.	Age	Young (Upto 35 years)	35	29.17
		Middle (36-55 years)	58	48.33
		Old (above 55 years)	27	22.50
2.	Education	Illiterate	25	20.83
		Literate	18	15.00
		Primary Education	16	13.33
		Junior high Education	23	19.17
		High Education	15	12.50
		Intermediate	17	14.17
		Graduate & above	06	05.00
3	Occupation	Agriculture	64	53.34
		Agriculture + Labour	32	26.66
		Agriculture + Business	16	13.34
		Agriculture + Service	08	06.66
4	Land holding	Up to 2.5 acres	28	23.34
		2.5 to 5 acres	71	59.16
		More than 5 acres	21	17.50
5	Family size	Small (up to 3 members)	57	47.50
		Medium (4-5 members)	48	40.00
		Large (6-7 members)	15	12.50
6	Annual income	Low (< 50,000 Rs)	34	28.34
		Medium (50,001-1,00,000 Rs)	57	47.50
		High (> 1,00,000 Rs)	29	24.16
7	Extension agent contact	Low (5-7)	39	32.50
		Medium (8-9)	58	48.34
		High (10-11)	23	19.16
8	Social participation	Low (10-14)	53	44.17
		Medium (15-18)	48	40.00
		High (19-22)	19	15.83
9	Housing Pattern	Mud	12	10.00
		Semi-Cemented	48	40.00
		Cemented	60	50.00
10	Scientific Orientation	Low	47	39.16
		Medium	54	45.00
		High	19	15.84
11	Risk Orientation	Low	29	24.17
		Medium	44	36.67
		High	47	39.17

It can be observed from the table 1. that 48.33 percent of the respondents belong to the middle age group and 20.83 percent of the respondents were illiterate. In terms of annual income 47.50 percent of the respondents has medium level of income in which 59.16 percent had land holding of 2.5-5 acres . It can also be observed from the above table that 53.34 percent of the respondents has working only agriculture and 47.50 percent of the respondents has small family. It is also evident that 48.34 percent of the respondents has medium level of extension agent contact. It is also evident that 44.17 percent of the respondents has cemented house pattern and 45.00 percent of the respondents medium level of scientific orientation. It is seen that in terms of risk orientation 39.17 percent of the respondents had belong to high level. Similar finding is also reported by Chouhan *et al.* (2013) ^[1].

It can be reported that regarding field preparation, 22.5 percent, 45.00 percent and 32.5 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding improved variety, 37.5 percent, 33.34 percent and 29.16 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding sett and its treatment, 22.50 percent, 55.83 percent and 21.66 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding sowing time, 40.00 percent, 50 percent and 10.00 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding spacing, 50 percent, 51.66 percent and 20 percent of respondents reported fully correct, partially correct and not correct response respectively.

Table 2: Knowledge of improved sugarcane production practices by the respondents

S. No.	Statement	Response					
		Fully correct		Partially correct		Not correct	
		f	%	f	%	f	%
Field preparation							
1.	i) Management of proceeding crop residues. ii) Tillage (ploughing, harrowing, sub soiling etc) iii) Levelling iv) Field layout	27	22.5	54	45	39	32.5
Improved variety							
2.	i) CO- 0238 ii) CO-0118	45	37.5	40	33.34	35	29.16
Sett and its treatment							
3.	Dipped in 2% carbendazime & 0.5% solution of Agallol for half hour.	27	22.5	67	55.83	26	21.66
Sowing time							
4.	i) October - November ii) February -March	48	40	60	50	12	10
Spacing							
5.	i) Row to row 60-90cm ii) Plant to plant 20cm	34	50	62	51.66	24	20
Fertilizers:(per hectare) NPK							
6.	150:60:110 FYM – 15 tonnes	52	43.33	61	50.85	7	5.83
Irrigation							
7.	3-4 days after planting during its grow period, the sugarcane crop irrigated every 10-15 days.	33	27.5	69	57.5	18	15
Weed management							
8.	2,4-d 1kg/ha Parquet @ 0.5 Kg/ha	28	23.33	53	44.16	39	32.5
Weed control							
9.	2,4-d 1kg/ha Parquet @ 0.5 Kg/ha	37	30.83	67	55.83	16	13.35
Diseases							
10.	Red rot Top borer	40	33.33	48	40.00	32	26.66
Harvesting							
11.	Early varieties- 10 to 11 month	31	25.83	67	55.83	22	18.33
	Mid varieties- 10-12 months						
	Late varieties- 10-12 months						
Yield:							
12.	Early variety- 70-75 ton/ha Late variety- 80-85 ton/ha	55	45.83	37	30.83	28	23.33
Soil:							
13.	Loamy	38	31.66	53	44.16	29	24.16
	Sandy Loamy						
	Clay						
Weed control							
14.	i) Pre-emergence ii) Post emergence	34	28.33	62	51.66	24	20
Soil PH							
15.	i) 6.0	43	35.83	72	60	5	4.16
	ii) 6.5						

Meanwhile, regarding fertilizers, 43.33 percent, 50.85 percent and 5.83 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding irrigation, 27.5 percent, 57.5 percent and 15 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding weed management, 23.33 percent, 44.16 percent and 32.5 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding weed control, 30.83 percent, 55.83 percent and 13.35 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding diseases, 33.33 percent, 40.00 percent and 26.66 percent of respondents reported fully correct, partially correct and not correct response respectively.

Similarly, regarding harvesting, 25.83 percent, 55.83 percent and 18.33 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding yield, 45.83 percent, 30.83 percent and 23.33 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding soil, 31.66 percent, 44.16 percent and 24.16 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding chemical weed control, 28.33 percent, 51.66 percent and 20 percent of respondents reported fully correct, partially correct and not correct response respectively. Regarding soil pH, 35.83 percent, 60 percent and 4.16 percent of respondents reported fully correct, partially correct and not correct response respectively.

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

S. No.	Category	Number	Percentage
1.	Low (15-24)	21	17.50
2.	Medium (25-33)	69	57.50
3.	High (34-45)	30	25.00
	Total	120	100.00

It was clearly visible that majority (57.50%) of the sugarcane growers had medium level of knowledge on improved sugarcane cultivation practices, 17.50 percent and 25.00

percent of the sugarcane growers had low and high level of knowledge on improved sugarcane cultivation practices respectively.

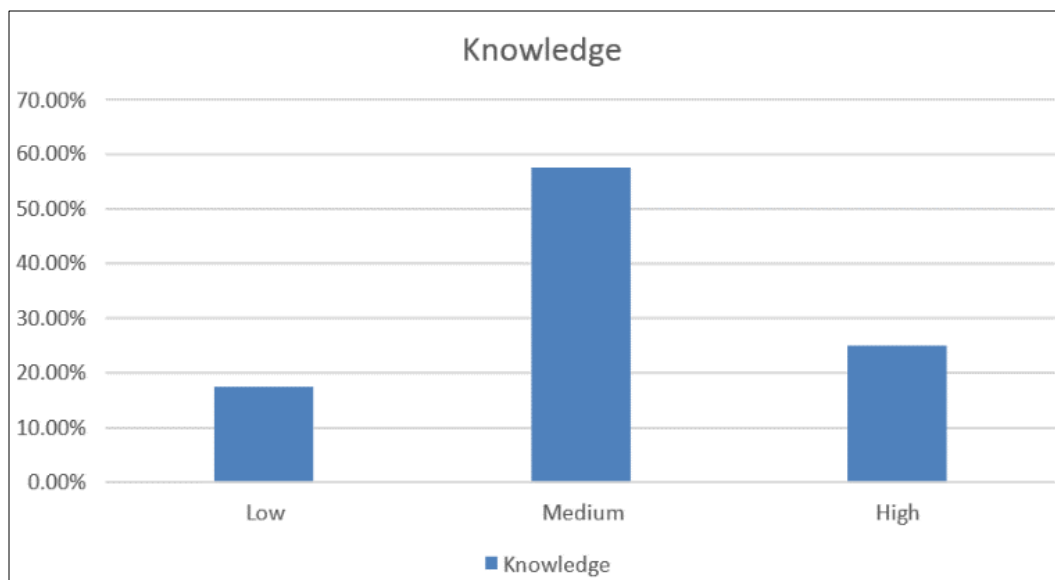


Fig 1: Distribution of respondents based on their overall knowledge of improved sugarcane cultivation practices.

Table 4: Association between independent variables and knowledge level of the respondents

S. No.	Characteristics	Correlation
X1	Age	0.995*
X2	Educational status	0.952*
X3	Occupational status	0.359**
X4	Size of land holding	0.976*
X5	Family size	0.617*
X6	Annual income	0.823*
X7	Housing pattern	0.065NS
X8	Extension agency contact	0.991*
X9	Social participation	0.669*
X10	Scientific orientation	0.872*
X11	Risk orientation	0.021NS

NS = Not Significant; * = Significant at 0.1%, ** = Significant at 0.5%

It is evident from the table 4 that the variables namely Age, Educational status, size of land holding, family size, annual income, extension agency contact, social participation, scientific orientation had positive and significant association at 0.1 percent level. Meanwhile, Occupation had positive and significant association at 0.5 percent level. Therefore, the null hypothesis was rejected for this variable. Whereas, the independent variable housing pattern and risk orientation was positively and non-significantly correlated with the knowledge of sugarcane growers towards improved sugarcane production practices. Therefore, the null hypothesis was accepted for this variables.

Conclusion

It is concluded that the age of the most of the respondents was middle and their educational level is also medium. Majority of the respondents possessed high level of risk orientation, occupation is agriculture, annual income medium level and most of the extension agent was also is medium level. The overall Knowledge of the respondents was found under medium level. The independent variables like age, occupation, size of land holding, extension agency contact, scientific orientation had positive and significant association. It is suggested that the government should provide awareness

and should conduct demonstrations for improving knowledge which will lead maximum production.

References

1. Chouhan Sandeep, Singh SRK, Pande AK, Gautam US. Adoption dynamics of improved sugarcane cultivation in Madhya Pradesh. *Indian Research Journal of Extension Education*. 2013;13(2):26-30.
2. Gurjar RS, Kuswaha S, Singh M, Singh S, Kaurav K. Determine the Level of Knowledge and Adoption of Sugarcane Production Technology among the Trained Farmers and Untrained Farmers. *International Journal of Pure and Applied Bioscience*. 2017;5(4):199-203.
3. Poswal CS, Mathur GP, Tyagi SK. Association in adoption of improved sugarcane production technology in District Muzzaffarnagar (UP). *International Journal Science*. 2005;9(1):87-90.
4. Rathod GV, Salame SP, Deokate N. Knowledge and adoption of improved cultivation practices by sugarcane growers. *International Journal of Chemical Studies*. 2018;6(6):653-654.