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A study on the knowledge and adoption of improved sugarcane production practices by the farmers in Sitapur district of U.P.

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Abstract

The present study was conducted to find out the knowledge of farmers towards production technology of Sugarcane crop in Sitapur district of Uttar Pradesh. The highest number of Sugarcane growers in the district led to the deliberate selection of 120 respondents from ten villages within the Hargaoon block with 12 respondents in each village. The data was collected using a pre-tested schedule and evaluated with appropriate statistical methods. The majority of respondents were medium land holdings (37.50%), medium annual income (47.50%), economic drive (43.33%), extension contacts (45.83%), Respondents' understanding of sugarcane growing procedures was medium (44.17%), Respondents adopted better sugarcane producing practices at a medium rate (47.50%), the most of respondents had respondents (54.16%) come from nuclear households and reside in semi-cemented houses (51.66%). The respondents demonstrated a medium level of scientific orientation (50.83%), risk-taking capacity (55.00%), mass media exposure (52.50%), middle-aged (55.83%), literate, and from the OBC caste (59.16%). The findings offer insights into establishing tailored interventions to improve farmers' agricultural practices and outcomes respectively.

Keywords: Knowledge, sugarcane, positive and significant

Introduction

The Indian agriculture is considered to be backbone of Indian economy. About 72.20 per cent population lives in rural areas. The main occupation of rural people is agriculture. About per cent of the national income originates from the agricultural sector. About 75.00 per cent of its population and 66.67 per cent of labour force, directly or indirectly is dependent on agriculture for livelihood. A large number of important industries like jute, textiles, edible oils, tobacco, sugar etc., receive the raw materials produced by agriculture sectors. India accounts for only about 2.4 per cent of the world's geographical area and 4 per cent of its wter resources, but has to support about 17 per cent of the world's human population and 15 per cent of the livestock. (Source: Annual report, 2012-13, Department of Agriculture and Cooperation).

Sugarcane is grown in many parts of the world, particularly in tropical and subtropical regions, and is used to produce about 80% of the world's sugar. The remaining 20% of sugar is produced from sugar beets. Sugar is a widely used product and is consumed by people in every country. On average, a person consumes around 24 kilograms of sugar each year. Sugarcane yields in India were predicted to be at 149.52 lakh tonnes in the financial year 2023 to reach 399.83 million tonnes in 2020-21. Sugarcane production in 2020-21 is expected to be 39.40 million tonnes more than the average of 360.43 million tonnes. After textiles, India's sugar sector is the country's second largest agro-based industry. This was down from a yield of roughly 80 metric tonnes per hectare the previous fiscal year. That year, Uttar Pradesh produced the most sugarcane, followed by Maharashtra, Odisha, and Tamil Nadu. The sugar business is India's second largest organised industry, after the textile industry, and it plays a significant role in the country's economic life. (GOI, 2013) [2].

This research is significant because it was conducted to examine problems and prospects in relation to sugarcane production technology, which benefits sugarcane growers and researchers as a whole.

Most of the farmer lacks access to training resources about the sugarcane package of practices, Quality sugarcane setts for seed are few and expensive, and input costs are high. Thus, the study will contribute to the provision of scientific knowledge on the essential individual, social, economic, and psychological elements that affect the acceptability of

large-scale sugarcane production. It is presumable that farmers want to make the most money possible. As a result, it is anticipated that the adoption behaviour of sugarcane producers

about suggested enhanced practises in sugarcane agriculture in the Sitapur district would be assessed.

The area and production of sugarcane in India vary each year due to changes in pricing policies and climate conditions. Sugarcane is grown on around 4.95 million hectares of land in India, and the total cane production for the country is 348.44 million tonnes according to the (Anonymous 2016).

Research Methodology

The study used a descriptive research methodology because it better explains the traits or phenomena under

investigation. The Sitapur district of Uttar Pradesh was the site of the current study. Out of the 19 blocks in Sonebhadra district, Hargaon block was purposefully chosen since it has the most Sugarcane farmers. Ten villages were purposefully chosen from the chosen block based on having the most Sugarcane farmers in the district.

Objectives of the Study

- To assess the socio-economic profile of the respondent.
- To determine the knowledge of the respondent in respect to package & practices of improved sugarcane production practices.
- To find out the association between selected independent variables with knowledge of the farmers.

Results and Discussion

Table 1: Socio-economic profile of the respondents

S. No	Independent variables	Category	Frequency	Percentage
1.	Age	Young (Upto 35 years)	23	19.16%
		Middle (36-55 years)	67	55.83%
		Old (above 55 years)	30	25.00%
2.	Education	Illiterate	36	30.00%
		Primary Education	31	25.83%
		High Education	27	22.50%
		Intermediate	17	14.16%
		Graduate & above	9	7.50%
3	Annual income	Low (<50000)	19	15.83%
		Medium (50000 – 100000)	57	47.50%
		High (>100000)	44	36.66%
4	Land holding	Marginal (up to 1 ha.)	22	18.33%
		Small (1 to 2 ha)	32	26.66%
		Medium (2 to 4 ha)	45	37.50%
		Large (Above 4 ha)	21	17.50%
5	Occupation	Only farming	96	80.00%
		Farming + Business	11	9.16%
		Farming + Service	7	5.83%
		Farming + Others	6	5.00%
6	Economic motivation	Low (9-11)	37	30.83%
		Medium (12-13)	52	43.33%
		High (14-15)	31	25.84%
7	Risk bearing capacity	Low (6 – 10)	32	26.67%
		Medium (11 – 14)	66	55.00%
		High (15 – 18)	22	18.33%
8	Mass media exposure	Low (4 – 8)	31	25.83%
		Medium (9 – 12)	63	52.50%
		High (13 – 16)	26	21.67%

From the table 1, It demonstrates that 55.83% of the respondents are in the middle age range. It is evident that 55.83% of the respondents lack a high-school diploma. In terms of yearly income, 47.50 percent of the respondents earn between Rs 50,000 and 100,000, while 44.99 percent farmer from marginal & and small category. It is clearly evident that 80% of the respondents work in

agriculture as their profession. Additionally, In the table, it is shown that 55.0% of respondents have a medium degree of risk tolerance and 55.00% of respondents have a medium level of economic drive. 43.33 percent of respondents demonstrated a medium level of media exposure, as can be shown. Identical finding is also reported by Verma *et al.* (2022)^[8].

Table 2: Knowledge level of farmers about sugarcane cultivation practices:

S. No.	Statements	Knowledge		
		Fully correct F (%)	Partially correct F (%)	Not correct F (%)
1.	Varieties CO 238 CO 214 Colk 1209	57 (47.50%)	41 (34.17%)	22 (18.33%)
2.	field preparation Deep ploughing Leveling FYM	85 (70.83%)	25 (20.83%)	10 (8.34%)
3.	Seed treatment	39 (32.50%)	54 (45.00%)	27 (22.50%)
4.	Time of sowing	81	39	0
	a. Sept-Oct	(67.50%)	(32.50%)	(0%)
	b. Feb-Mar			
	c. Jun-Aug			
5.	recommended method Flat planting Deep furrow planting	81 (67.50%)	32 (26.66%)	7 (5.84%)
6.	Fertilizer application Urea 325-350 kg/ha D.A.P. 125-130 kg/ha c. M.O.P. 50-60 kg/ha	41 (34.17%)	59 (49.17%)	20 (16.66%)
7.	Irrigation management 30-35 day after sowing At the time of formative stage At time of making sucrose At the time of ripening	36 (30.00%)	59 (49.17%)	25 (20.83%)
8.	Time of weed management 20-25 days after sowing 75-90 days after sowing 150 days after sowing	41 (34.17%)	57 (47.50%)	22 (18.33%)
9.	Disease Red rot Leaf scald disease	45 (37.50%)	61 (50.83%)	14 (11.17%)
10.	Harvesting Oct-Dec Jan-Feb	84 (70.00%)	28 (23.33%)	8 (6.67%)
11.	Yield of sugarcane par ha.	38 (31.67%)	53 (44.17%)	29 (24.16%)

Table 3: Distribution of the respondents on the basis of overall Knowledge level of farmers about sugarcane cultivation practices:

Sl. No.	Categories	Frequency	Percentage
1.	Low (19-23)	26	21.67
2.	Medium (24-27)	53	44.17
3.	High (28-31)	41	34.16
Total		120	100.00

It is apparent from Table No. 3 found that 44.17% of respondents had a moderate level of knowledge regarding sugarcane production procedures. A significant percentage

of sugarcane farmers were found to have high (34.16%) and low (21.67%) levels of expertise, respectively.

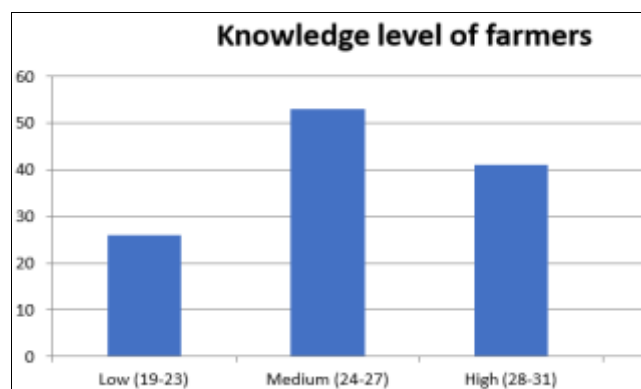


Fig 1: Distribution of the respondents based on the overall knowledge level of farmers about sugarcane cultivation practices

Table 4: Correlation coefficient (r) between different Independent variables and Knowledge about improved sugarcane cultivation practices:

Sl. No.	Independent Variable	Correlation coefficient
1.	Age	0.967*
2.	Education	0.599*
3.	Caste	0.911*
4.	land holding	0.498**
5.	Occupation	0.774*
6.	Annual income	0.928*
7.	Type of house	0.993*
8.	Type of family	0.050NS
9.	Size of family	0.997*
10.	Scientific orientation	0.873*
11.	Economic motivation	0.829*
12.	Risk bearing capacity	0.730*
13.	Mass media exposure	0.786*
14.	Extension contact	0.455**

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

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

NS= Non-significant

From this above Table 4 concluded that the independent variables i.e. age (0.967362) education (0.59998) caste (0.911669), land holding (0.49873), occupation (0.77417) annual income (0.928397) type of house (0.993247) size of family (0.997662) scientific orientation (0.873908) economic motivation (0.829831) risk bearing capacity (0.730872) mass media exposure (0.786005) were positively and significantly correlated with level of knowledge toward improved sugarcane cultivation practices measures at 0.01 percent of probability, As a result, the null hypothesis was rejected for these variables. Extension contact (0.455292) exposure were positively and significantly correlated with level of knowledge toward improved sugarcane cultivation practices measures at 0.05 percent of probability. While Type of family (0.050) was non-significant correlated with level of knowledge toward improved sugarcane cultivation practices Sebele-Mpofu *et al.* (2019)^[6]

Conclusion

It is concluded that the respondents' socio-economic profile, including age, education, occupation, family size, family type, extended contact, risk bearing ability, mass media exposure, and economic incentive, was found to be medium. Sugarcane growers' knowledge levels were determined to be medium, as was their adoption level. The relationship between chosen independent variables (age, education, caste, land holding, occupation, annual income, scientific orientation, risk bearing ability, and extension contact) and dependent variables was found to be positively and statistically associated. The survey concluded that the majority of respondents reported substantial restraints such as high labour wages during sowing and harvesting, a lack of understanding regarding setts treatment, and the high cost of insecticides and pesticides. It is advised that the government give them with a better value for sugarcane as well as sufficient training and information about sugarcane farming.

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