

CORRELATES OF KNOWLEDGE OF SUGARCANE PRODUCTION TECHNOLOGY

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ABSTRACT

The knowledge of any technology is a key factor for its' adoption. The present study was conducted in Sehore district of Madhya Pradesh, with a view to study growers' level of knowledge and to analyze correlates of their level of knowledge for sugarcane production technology. It was evident that majority of the respondents possess medium level of knowledge. The small farmers possessed higher knowledge than medium and large farmers. The growers' age, education, area under sugarcane, irrigation potentiality, economic motivation and management orientation were correlated with their level of knowledge.

INTRODUCTION

Sugarcane is one of the important commercial crops in India grown for sweeteners. Indian population is the largest consumer of sugar in the world. According to the estimates of National Commission on Agriculture, by 2020 A.D., the increase of demand of sweeteners may go up to 54.4 million tones. To achieve this target the sugarcane production has to be increased to about 450 million tones with 100 tones/ha productivity and 11.00 per cent recovery level (Yadav and Singh, 1997). In spite of the growing demand, the productivity level of the sugarcane in Madhya Pradesh is very low (43 tones/ha.) This may be due to non-adoption of technologies of sugarcane production.

The knowledge of an innovation can create motivation for its adoption (Rogers, 1983). In order to increase the level of adoption, farmers must be made knowledgeable about technologies. The knowledge of sugarcane growers for sugarcane

production technologies is a crucial input for increasing the productivity of sugarcane. Hence, to examine the extent of knowledge possessed by sugarcane growers, the present investigation was carried out with the following objectives:

1. To study the level of knowledge of sugarcane production technology possessed by sugarcane growers.
2. To analyze the relationship between characteristics of sugarcane growers and their level of knowledge for sugarcane production technology.

METHODOLOGY

The study was conducted in ten randomly selected villages of three selected development blocks in Sehore district of Madhya Pradesh by using 'ex post facto' research design during year 2001. Fifteen respondents (five small, five medium and five large holding farmers) from each of these village, selected randomly, constitutes the sample of 150 respondents.

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To know the knowledge level of the sugarcane growers, a knowledge test was developed. The test consisted of 22 questions called items. The items were taken from available literature and in consultation with the concerned specialists. The items were assigned a score of '1' for correct answer and '0' for incorrect response. A respondent's total score was obtained by summing his score for all the items on the test.

The data presented in Table 1 indicate that majority of the respondents (70.66 per cent) possessed medium level of knowledge, while 15.33 and 14.00 per cent respondents possessed high and low level of knowledge respectively. The data in Table 1 also reveal that the overall mean score of knowledge was 13.89. The 't' test reported that the mean score of small versus medium and medium versus

Table 1: Distribution of the respondents according to their knowledge about sugarcane production technology

Categories	Small Farmers N=50		Medium Farmers N=50		Large Farmers N=50		Total N=150	
	No.	%	No.	%	No.	%	No.	%
Low (<11.40)	4	8.00	12	24.00	5	10.00	21	14.00
Medium (11.4 to 16.38)	39	78.00	31	62.00	36	72.00	106	70.66
High (>16.38)	7	14.00	7	14.00	9	18.00	23	15.33
Mean		14.20		13.32		14.16		13.89
SD		2.17		2.66		2.57		2.49

t (for SF & MF) = 3.7531 ** t (for MF & LF) = 3.0712 ** t (for SF & LF) = 0.1769 ^{NS}

** Significant at 0.01 level of probability

NS = Non significant

The respondents were personally interviewed with pre-tested schedule consisting of the knowledge test. To assess the level of knowledge of respondents, knowledge index was calculated for each of the respondents. On the basis of the knowledge index, the respondents were divided in to three different knowledge groups i.e. low (< 11.40), medium (11.40 to 16.38) and high (> 16.38) knowledge group.

RESULTS AND DISCUSSION

LEVEL OF KNOWLEDGE

The frequency distribution of the respondents based on their knowledge index is presented in Table 1.

large holding farmers varied with each other, where as mean score of small versus large holding farmers did not vary. Thus, it can be concluded that the knowledge level of the small holding farmers was higher than medium and large holding farmers. This might be due to more consciousness of small holding farmers for getting more production out of small unit of land.

CORRELATES OF KNOWLEDGE

In order to determine the relationship of the antecedent variables with the knowledge of the respondents regarding sugarcane production technology, the

Table 2: Correlates of knowledge about sugarcane production technology

Sr. No.	Characteristics	Correlation	Partial Regression	't' value
		Coefficient (r)	Coefficient (b)	
1	Age	- 0.1839	- 0.021	0.662
2	Education	0.5191 **	1.098	4.033
3	Farm size	- 0.0216	- 0.006	0.403
4	Area under sugarcane	0.0646	0.632	2.134
5	Farming Experience	0.2004 *	- 0.001	0.028
6	Annual Income	0.0093	0.070	0.175
7	Farm Mechanization	- 0.0060	- 0.012	0.928
8	Irrigation Potentiality	0.2071	0.024	2.015
9	Credit orientation	- 0.0269	- 0.040	0.403
10	Economic motivation	0.0710	0.065	1.035
11	Scientific orientation	0.0340	- 0.009	0.134
12	Risk orientation	0.0325	- 0.022	0.420
13	Management orientation	0.1895	0.039	1.328
14	Information seeking behaviour	0.3599 **	0.081	0.798
15	Extension Participation	0.3599 **	0.018	0.621
16	Mass media exposure	0.2530 **	- 0.006	0.087

Multiple R² = 0.3578, Multiple R = 0.5782, F = value for R = 4.63 **

* Significant at 0.05 level of probability

** Significant at 0.01 level of probability

regression analysis and results are presented in Table 2.

It is apparent from the table that out of 15 independent variables, only five variables have shown their significant and positive relationship with the knowledge score. These five variables are education, farming experience, information seeking behavior, extension participation and mass media exposure. Similar findings were also

reported by Reddy and Swaroop (1995) in case of sunflower cultivation; Kubde et. al. (1999) in case of soybean; and by Borker et. al. (2000) in case of bio-fertilizers.

The regression analyses were carried out with all the sixteen variables and the results are presented in Table 2. The data in Table 3 revealed that out of sixteen variables, only three variables namely education, area

Table 3: Optimum model of multiple regression analysis of six variables with knowledge

Independent variable	Regression	Standard error	Computed 't' value
	Coefficient (byz)	of "b"	
Age	- 0.028	0.015	1.849
Education	1.222	0.184 **	6.648
Area under sugarcane	0.495	0.206 **	2.398
Irrigation potential	0.026	0.011 **	2.405
Economic motivation	0.063	0.060	1.055
Management orientation	0.038	0.028	1.364

R² = 0.3441, R = 0.5866, F value for R = 12.51 **

** Significant at 0.01 level of probability

under sugarcane and irrigation potential were significant in explaining the variation in knowledge. Thus these three variables could be termed as good predictors of knowledge of sugarcane growers. The coefficient of determination $R^2 = 0.3578$ indicated that all the sixteen variables together explained 35.78 per cent variation in the knowledge of sugarcane growers regarding sugarcane production technology which was found to be significant.

For arriving at an optimum model of prediction; analysis of knowledge with only those selected variables which significantly contributed to R^2 was made. The variables which had least contribution were deleted from regression analysis on the basis of low 't' value. Thus, finally only six variables namely age, education, area under sugarcane, irrigation potentiality, economic motivation and management orientation were remained. The coefficient of determination $R^2 = 0.3441$ indicated that these six variables jointly expressed 34.41 per cent variation in knowledge which was found to be significant (Table 3).

CONCLUSION

The study concluded that majority of the respondent sugarcane producers possessed medium level of knowledge. The small farmers possessed higher knowledge than medium and large farmers. Out of

the sixteen selected factors; six viz., age, education, area under sugarcane, irrigation potentiality, economic motivation and management orientation were relatively more important indicators since these six factors produced nearly equal variation (34.41 per cent) to that of the sixteen factors (35.78 per cent).

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