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Knowledge of recommended sugarcane production technology in Sri Ganganagar district of Rajasthan

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Abstract
Majority of the respondents (58.34%) had medium knowledge level regarding improved sugarcane cultivation technology while 19.16 and 22.5 per cent respondents possessed low and high knowledge level, respectively. The findings of the study indicated that majority of sugarcane growers had adequate knowledge regarding irrigation management followed by harvesting, soil treatment and weed management and Shoots with 3 buds setts & recommended method of sowing, whereas they had less knowledge regarding Use of high yielding varieties, Time of sowing and Plant protection measures.

Keywords: sugarcane, Sri Ganganagar, Rajasthan

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 per cent 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. Sugarcane 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 khandsari. It is also used for chewing and extraction of juice for beverage purpose. Sugarcane is becoming an important cash crop for farmers because there is a great potential for sugar production and by products of sugarcane in domestic market. Therefore, the expansion of sugarcane industry in India would greatly benefit the economy by foreign exchange saving, generation of employment and income, development of rural area and living standard of rural people. India is considered as homeland of sugarcane. There is a common observation that most of the technologies evolved remain at the research stations and it is not uniformly adopted by the farmers. There is no exception with sugarcane on the basis of extensive research on sugarcane over past couple of decades; sugarcane technologies are now available which can boost sugarcane production. Although enough viable and adoptive technologies have been developed, many of these have not reached the ultimate growers. This may be one of the reasons for poor average sugarcane yield and sugar recovery as compared to both potentiality of sugarcane yield and recovery. Sugarcane and sugar output can be increased if the growers adopt the recommended package relating to sugarcane production technology. For increasing the level of adoption, farmers need to be convinced about recent knowledge regarding production technologies. In this regard, it is imperative to examine their status of knowledge and the factors which hinder the process of their adoption.

Materials and Methods
The present study was conducted in Sri Ganganagar district of Rajasthan. There are total 10 tehsils in Sri Ganganagar district of Rajasthan, out of which Sri Ganganagar and Sri Karanpur tehsils were selected on the basis of maximum area under cultivation of sugarcane. A complete list of all the major sugarcane growing villages was prepared in consultation with the personnel of revenue and agriculture department from the identified tehsils. The list so prepared, 5 villages from each tehsil were selected on the basis of maximum area under sugarcane cultivation. Thus, total 10 villages were selected for the present investigation. For selection of respondents, a comprehensive list of small, marginal and large farmers of sugarcane growers was prepared with the help of village Patwari and agricultural supervisor of respective village. Total 120 sugarcane growers were included in the sample of study.

Results and Discussion

Socio economic characteristics of the respondents

The data presented in Table 1 reveal that majority of respondents belonged to the age group of 36 to 55 years. This group alone constitutes 62.5 per cent of the total sample. A considerable number of respondents 31.66 per cent were from the age group of below 38 years and only 21.67 per cent respondents were found to be from age group of above 35 years, only 15.83 per cent were in category of illiterate; whereas percentage of literate and educated respondents were 43.34 per cent and 35.00 per cent, 33.33 per cent farmers possessed 3 to 6 hectares of land holding, whereas 33.33 per cent farmers having less than 4 hectares of land holding and 25 per cent farmers having more than 10 hectares land holding, 33.33 per cent farmers had annual income below Rs. 48000 whereas 40.00 per cent and 25.00 per cent farmers had annual income Rs. 48, 000 to Rs. 96,000 and above Rs. 96,000, 65.00 per cent were from large families (above 5 members) while remaining 35.00 per cent from small families (up to 5 members), 36.67 per cent belonged to nuclear families while remaining 32.5 per cent families were joint in their compassion.

Table 1: Socio economic characteristics of the respondents

Characteristics	Frequency(N=120)	Percentage
Age group		
Below 35 years	26	21.67
36 to 55 years	75	62.5
Above 55 years	19	15.83
Educational group		
Illiterate	19	15.83
Primary	26	21.67
High school	32	26.67
Intermediate	34	28.33
Graduate and above	9	7.5
Size of land holding		
Less than1 hectares (Marginal)	40	33.33
1 to 2 hectares (Small)	43	35.83
4 to 10 hectares (Large)	30	25
More than 10 hectares	7	5.83
Annual income of respondent		
Below Rs. 48, 000	42	35.00
Rs. 48,000 to 96,000	48	40.00
Above Rs. 96,000	30	25.00
Family size		
Small size (up to 5 members)	42	35.00
Large size (above 5 members)	78	65.00
Family Type		
Nuclear families	81	65.5
Joint families	39	32.5

Knowledge Level of Farmers about Production Technology of Sugarcane

The data in Table 2 shows that out of 120 respondents, majority of respondents 58.34 per cent fell in medium level knowledge group whereas 19.16 per cent sugarcane growers were observed in low level knowledge group and remaining 22.5 per cent respondents possessed high level of knowledge about recommended production technology of sugarcane.

Table 2: Distribution of respondents on the basis of level of knowledge about recommended production technology of sugarcane

Knowledge level	Frequency	Percentage
Low (12-14)	23	19.16
Medium (15-16)	70	58.34
High (17-18)	27	22.5
Total	120	100.00

In overall, it has found that first rank is given to irrigation management with MPS 87.26, followed by harvesting with MPS 85.67, soil treatment with MPS 74.85, weed management with MPS 74.85 and were ranked second, third and fourth respectively. It indicates that sugarcane growers knew very well about harvesting, soil treatment and weed management. Whereas less knowledge regarding Plant protection measures with MPS 69.97, Time of sowing with MPS 63.78 and Use of high yielding varieties with MPS 61.93.

Table 3: Extent of knowledge of farmers about recommended production technology of sugarcane N=120

S. No.	Aspects/ Practices	Total respondents	
		MPS	RANK
1.	Use of high yielding varieties	61.93	XI
2.	Soil and field preparation	71.26	VII
3.	Soil treatment	74.85	III
4.	Seed treatment	72.16	VI
5.	Time of sowing	63.78	X
6	Shoots with 3 buds setts & recommended method of sowing	73.11	V
7.	Fertilizer application	70.85	VIII
8.	Irrigation management	87.26	I
9.	Weed management	73.74	IV
10.	Plant protection measures	69.97	IX
11.	Harvesting	85.67	II

MPS= Mean Per cent Score Conclusion

The findings of the study indicated that majority of sugarcane growers had adequate knowledge regarding irrigation management followed by harvesting, soil treatment and weed management and seed rate & recommended method of

sowing, whereas they had less knowledge regarding Use of high yielding varieties, time of sowing and Plant protection measures.

Conclusion
This study in the Sri Ganganagar District of Rajasthan that majority of respondents belonged to the age group of 36 to 55 years, in the education group majority of respondents in intermediate, According size of land holding majority of respondents 1 to 2 hac., annual income of respondent is 48000 to 96000, Family size majority of respondents in large size and majority of respondents belonged to the family type of nuclear families. Knowledge Level of Farmers about Production Technology of Sugarcane majority of respondents 58.34 per cent fell in medium level knowledge group. Knowledge of farmers about recommended production technology of sugarcane first rank is given to irrigation management with MPS 87.26, followed by harvesting with MPS 85.67, soil treatment with MPS 74.85. Whereas less knowledge regarding Plant protection measures with MPS 69.97, Time of sowing with MPS 63.78 and Use of high yielding varieties with MPS 61.93.

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