



SUGARCANE GROWERS ADOPTION OF MODERN TECHNOLOGIES IN NORTH EASTERN PART OF KOLHAPUR DISTRICT

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ABSTRACT

Maharashtra is India's largest sugar-producing state that contributes around 30-35 per cent to the nation's sugar production. This sugar industry can provide numbers of growth centers in rural regions. This sugarcane farming has brought about several socio-economic changes in the study region. Nowadays, Sugarcane Production decreasing and costs of production are increasing. A modern technology in sugarcane farming is an essential factor. The study was carried out to identify farmers' information sources and to assess their level of awareness and adoption of modern technologies. For this purpose, 120 sugarcane growers in north eastern part of Kolhapur district were taken as study respondents. This paper has made an attempt to study the farmers' attitude towards some aspects like sources of information, awareness and adoption level. The present study explores the farmers' attitude of sugarcane farming that will help to understand their different problems.

Keywords: Socio-Economic, Modern technologies, Awareness, Adoption, Attitude.

INTRODUCTION

Sugarcane is not traded directly, but produced sugar plays important role in economy of country. In, 2013-14, World sugarcane production is close to 1.6 billion tons annually and is concentrated in tropical regions, particularly developing nations in Latin America, Africa and Asia. According to the FAO (U.N. Food and Agricultural Organization), these are over 100 countries producing sugarcane (sugercane.org)

India has the world's largest area under sugarcane. This crop is the main source of sugar, gur and khandsari and it holds a pre-eminent position as a cash crop in the largest value of production amongst all the commercial crops. In fact sugarcane holds an enviable position amongst all the commercial crops accounting for 5.6 percent of the total value of India's agricultural production, though it covers only 1.8 percent of the total cropped area in the country.

In western Maharashtra, Kolhapur district is famous for sugarcane farming. Sugarcane is principle cash crop of this region. Shirol and Hatkanangale tahsils lies the lower reaches of Panchaganga basin in southern part of Maharashtra. The panchaganga basin has benefited from unparalleled sedimentation and has developed into one of the most productive areas of the state due to (Dikshit 1986) the assured water supply, presence of deep black soil along the river valleys, growth of sugar factories and attraction of farmers to cultivate high cash returning crop. Therefore the selected region of the present study is famous for sugarcane cultivation in Maharashtra.

IMPORTANCE OF THE STUDY

Sugarcane farming is the backbone of the study region and epitomizes the people's way of life. Majority population still depends directly or indirectly on agricultural. In the last few decades, changing agriculture factors promoted farmers to change their traditional agricultural practices. The traditional agriculture is transforming into, hi-tech agriculture. There is also a need for updated information for increased agricultural production and productivity.

The decline in sugarcane production may mainly be attributed to shortage of irrigation water, delayed planting, poor plant protection, imbalanced fertilizer use, inappropriate soil management and poor land preparation. Low sugarcane productivity is primarily, the result of outdated technology prevalent on farm sector particularity among the farmers.

The modern technology, which comprises new varieties, improved sowing methods; fertilizers, pesticides, and farm machinery are not properly diffused and widely adopted by the farmers. Research and experience of advanced countries have shown that key to increase per hectare yield lies in the adoption of modern scientific technologies by the farmers for which they do have contacts with a variety of information sources. Therefore, a need exists to identify the information sources for the farmers and to assess their level of awareness and adoption of sugarcane production technologies.

OBJECTIVES

1. To study the demographical profile of the study region.
2. To assess attitude of farmers towards modern technology, information in study region.

METHODOLOGY

1 Data collection: The study is based on primary as well as secondary data. The data was collected through farmers' interviews using a well- structured interviewing schedule. The data thus obtained was analyzed to draw conclusions and make pertinent recommendations. The farmers were classified into small, medium and large farm categories according to size of their operational land holding.

2 Sampling Technique: In the study region there are 2 tahsils Shirol and hatkanangale. There are 14 circles included in these two tahsils. As such 28 villages (25%) out of 115 are selected for intensive fieldwork. For micro level analysis, the selection of villages has been done on stratified random sampling technique. There are 14 villages selected from each tehsil. Accordingly interviews of 120 selected farmers were conducted. In the study region more than 60% small and marginal farmers and 40% are medium and large farmers. Growers are selected on the 60, 30, 10% respectively small, medium and large farm size group.

Table 1 Distribution of the Sample Farmers by Farm Size.

Study Region	No of farmers	Farm size groups		
		Small (<2.5 hec.)	Medium (2.5-10 hec.)	Large (Above 10 hec.)
North eastern	120	72	32	16

Source: Compiled by the researcher.

PHYSIOGRAHY AND LOCATION

There are two tahsils in the study region. Shirol is prosperous tahsil due to the network of Krishna, Panchganga, Warna and Dhudganga rivers. The area encompassed by shirol tahsil is 507.9 sq. km. The total population of the tahsil is 4, 35,000 settle in 53 panchayats and 2

Municipal Corporations and the rate of literacy is 76%. The total area of the Hatkanangale tahsil is 609 sq. km. The widespread has been encompassed by warna and Panchganga River. The total population of the tahsil is 7, 62,563 settled in 62 villeges and 2 municipal corporation. Whereas the literacy rate is 70%.

The study region located in eastern part of district. This study region situated between 16 30 and 16 55 North latitudes and 74 10 and 74 45 East longitudes. It is located entirely in the lower Panchaganga and Warana basin. Average height of above mean sea level varies from 522 to 600 meters. It has 1116 sq. km land constituting 14.4 percent geographical area of the Kolhapur district.

Administratively study region divided into 14 circles. There are 115 villages and 7 municipalities. It is bounded on the north by warna river boundary between Kolhapur district and Sangli district, on the east by Krishna River, on the west by Panhala and Karveer tahsil of Kolhapur district, on the south by Dudhaganga River, the boundary between states of Maharashtra and Karnataka. According to 2011 census the total population of study region is 11, 98,766.

Table 2 Brief Profile of Kolhapur District and Study Area.

Field	Area (hect.)	population	Literacy%	Cultivation area in hect.	Sugarcane area in hect.
Kolhapur district	774600	38,76,001	72.91	393869*	147469* (37.44%)
Study area	111720 (14.42%)	11,98,766 (30.93)	74.72	81819* (20.77%)	44925* (30.46%)

Source: district agriculture officer, Kolhapur,*year 2015-16

In Kolhapur district there are 12 tahsils. Major Sugarcane Producing tahsils are Shirol, Hatkanangale, Kagal and Karveer. In the study region there are two tahsils out of 12 in Kolhapur district. These study areas occupy 20.77% area in cultivation area.

DEMOGRAPHIC PROFILE OF SUGARCANE FARMERS IN STUDY AREA

Table 3 Demographic Profile Of Sugarcane Farmers In Study Region.

Sr. No.	Demographical Variable	Classification	Study Area (%)
1	Age	20-30	05
		30-40	17
		40-50	47
		50-60	21
		60>	10
Total			100
2	Education	1-8	10
		9-10	27
		11-12	28
		Graduate & above	32
		Illiterate	03
Total			100
3	Family Size	0-5	70
		6-10	22
		10>	08
Total			100
4	Area Of Field(Acres)	<2.5	60
		2.5-5	20

		5-7.5	07
		7.5>	13
Total			100
5	Other occupations	<u>Animal husbandry</u>	82
		Shop	11
		Others	03
Total			96

Source: Compiled by the researcher

Table 2 shows that maximum farmers are from the age group of 40 to 50 years in sample. The education of most of the farmers is higher secondary and graduate. Therefore majority of the farming members are 5 members. Most of the farmers have area of land up to 2.5 acre and most of the farmers have other occupations.

ADOPTION LEVEL OF RECOMMENDED SUGARCANE MODERN TECH. IN FARM BY FARMERS.

Table 4 Adoption of Recommended Sugarcane Production Technologies by Sample Farmers

Sugarcane Production Technologies	Adoptability	Farm Size Group			All AVER.	TOTAL %
		Small %	Medium %	Large %		
Varieties	Adoption	16.7	9.2	11.6	37.5	100
	Non-adoption	43.3	17.5	1.7	62.5	
Sowing method	Adoption	10.8	7.5	11.7	30	100
	Non-adoption	49.1	19.2	1.7	70	
Fertilizers application	Adoption	26.7	10.8	12.5	50	100
	Non-adoption	33.3	15.8	0.8	50	
Eradication of weeds	Adoption	11.7	13.3	10.8	35.8	100
	Non-adoption	48.4	13.3	2.5	64.2	
Irrigation	Adoption	10.8	13.3	12.2	36.3	100
	Non-adoption	49.6	13.3	0.8	63.7	
Plant protection	Adoption	28.3	17.5	11.7	57.5	100
	Non-adoption	31.7	9.2	1.7	42.5	
Yield obtained	Adoption	13.3	10	10.8	34.1	100
	Non-adoption	46.7	16.7	2.5	65.9	
Soil testing	Adoption	7.5	6.7	12.5	26.7	100
	Non-adoption	52.5	20	0.8	73.3	
Crop rotation	Adoption	33.3	17.5	10	60.8	100
	Non-adoption	26.7	9.2	2.5	38.4	
Agri. Information	Adoption	20	10	10.8	40.8	100
	Non-adoption	40	16.7	2.5	59.2	

Source: Compiled by the researcher

Table 3 shows Majority of large farmers adopted the sugarcane production technologies i.e. recommended varieties, sowing methods, fertilizer application, and eradication of weeds, irrigation and plant protection. The adoption rate among large farmers was high as compared to other farm size groups. This may be due to high education level and large operational land holdings of large farmers. These results are similar to those of Ahsan (1987) and Ali (1987) who reported that education and size of land holding of the farmers had strong and positive relationship with adoption of improved agronomic practices. Moreover, a significant proportion of small farmers did not adopt the sugarcane production technologies, which was high as compared to other farm size groups in the study area. This

may be due to low income, lack of knowledge, high cost of inputs and small operational land holdings of small farmers. These results are similar to those of Shabbir (1986), Khan (1987), Shakeel (1988) and Khan (1992) who found that the main reasons for non- adoption of chemical control measures were lack of knowledge, high costs of pesticides and non-availability of pure pesticides in the nearby market.

FARMERS ATTITUDES TOWARDS DIFFERENT SOURCES OF INFORMATION IN SUGARCANE FARMING

Table 5 Awareness about sugarcane production technologies.

INFORMATION SOURCES	USED REGULAR		USED SOME TIMES		NEVER USED	
	NUMBER	%	NUMBER	%	NUMBER	%
Self-experience	81	(67.5)	39	(32.5)	0	(0)
Parents advice	70	(58.3)	48	(40.0)	02	(1.7)
Friends	63	(52.5)	45	(37.5)	12	(10.0)
Progressive farmers	25	(20.83)	48	(40.0)	47	(39.17)
Research centers	10	(8.3)	22	(18.3)	88	(73.3)
Sugar mills	23	(19.16)	44	(36.7)	53	(44.17)
Newspaper	18	(15.0)	47	(39.17)	55	(45.83)
Magazines	08	(6.7)	13	(10.83)	99	(82.5)
Radio	04	(3.3)	11	(9.2)	105	(87.5)
Tv	25	(20.83)	68	(56.67)	27	(22.5)
Mobile	04	(3.3)	09	(7.5)	107	(89.17)
Internet	13	(10.8)	18	(15)	89	(74.17)
TOTAL	344	(23.89)	412	(28.61)	684	(47.5)
1440						

Source: Compiled by the researcher

Revealed that a significant proportion of farmers gathered information about sugarcane production technologies i.e. recommended varieties, sowing methods, fertilizer application, eradication weeds, irrigation and plant protection. A majority of the respondents got information from the self-experience and parents advice. Very low farmers obtained information about sugarcane production technologies through mass media (radio/television and printed material),

CONCLUSION

The sugarcane farming has significantly contributed the socio-economic development of the people at north-eastern part of Kolhapur district. The sugarcane is one of the important cash crops in these particular places. Therefore the effective management is the key to have the ultimate benefits of sugarcane farming to farmers. The farmers are facing different problems relating to attitude and awareness which has made bad impact on sugarcane farming.

A majority of the respondents got information from the self-experience and parents advice. Very low farmers obtained information about sugarcane production technologies through mass media (radio/television and printed material), there is need to take proper modern technologies positive decision by the farmers. The proper adaptation will increase economic value of the sugarcane crop which ultimately gives benefit to the sugarcane farmers. The farmers' increasing awareness of modern technology management will sustain their farming and it will be made financial feasible activity.



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