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Knowledge Level Of Sugarcane Growers About Recommended Practices In Sugarcane Cultivation

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Abstract

Sugarcane is one of the major cash crops of India which is the home land of sugarcane cultivation and sugar production. Sugarcane cultivation and development of sugar industry runs parallel to the growth of human civilisation and is as old as agriculture. Recurring surpluses and deficits in the production of sugarcane and mass consumption have become a serious concern of Indian Sugar Industry. It is important that the productivity of sugarcane has to be increased for meeting the increasing requirement of sugar consumption in the country. Hence a study was undertaken to analyse the knowledge level of sugarcane growers about recommended practices in sugarcane cultivation. The study was taken up at Cuddalore, one of the sugarcane predominant districts in Tamil Nadu State.A sample size of one hundred and twenty growers were selected based on proportionate random sampling method. This study revealed that cent per cent of the respondents possessed knowledge about sugarcane varieties, planting season and harvesting. It was also observed that majority of the respondents possessed knowledge on irrigation, manuring, detrashing, herbicide application, spacing, sett rateand earthing up. Less than half of the sugarcane growers possessed knowledge on bio-control agents.

Key words : knowledge level, Recommended practices and Sugarcane growers.

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I. INTRODUCTION

Sugarcane is one of the several species of tall perennial true grasses of the genus Saccharum, tribe Andropogoneae, native to the warm temperate to tropical regions of South Asia, Melanesia (Fiji, Papua New Guinea, Solomon Islands and Vanuatu) and used for sugar production.Global production of sugarcane in 2017 was 1.84 billion tonnes, with Brazil producing 41% of the world total, India producing 17% of the total, and China and Thailand producing about 6% each.

Worldwide average yield of sugarcane crop in 2016 was 70.6 tonnes per hectare, led by Peru with 112 tonnes per hectare and Zambia with 103 (FAOSTAT, 2017). Sugarcane is cultivated in an area of 4.95 million hectares in India producing 352.163 million tonnes with a productivity of 71.09 tonnes per hectare and in Tamil Nadu, it occupies 0.257 million hectares producing 26.497 million tonnes with a productivity of 102.998 tonnes per hectare (Statistical Year Book India, 2018).

By-products of sugar industry are also playing an important role in the national economy. Molasses, the chief by-product, is the main raw material for alcohol and thus for alcohol-based industries in the country. Sugarcane bagasse (the fibrous material left over after crushing) is the chief source of power in the sugar mills. Excess bagasse is now being used as raw material in the paper industry. Besides, co-generation of power using bagasse as fuel is considered feasible in most sugar mills. It has been estimated that about 3500 MW power can be generated annually without extra fuel and investments much less than that required for generating the same through thermal power plants. Another by-product, press mud, contains considerable amount of plant nutrients and could be an important source of organic matter, major and micronutrients. Sugarcane green tops are used as cattle feed. In urban areas, sugarcane juice has great demand as a thirst quencher.

India shares about 13.25 per cent of the world and 41.11 per cent of Asian sugar production. The Indian sugarcane and sugar industry has a unique, intrinsic and symbiotic relationship with the rural masses and contributes around 2.00 per cent of the national Gross Domestic Product (GDP). It employs over 40 million sugarcane growers and about 3.5 lakhs skilled and unskilled workers. Being the second largest agro-based industry, it plays a dominant role in both the agricultural and the industrial economy of the country.

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With the fastest increasing population, the sugar requirement in the country will rise considerably during the next two decades. Due to pressure from food and fibre crops, there will be lessscope to expand the area under this crop and the only course available will be to raise the productivity of cane. This is possible only by making the sugarcane growers to gain knowledge about the latest recommended practices in sugarcane cultivation and adopting them.

II. METHODOLOGY

The study was conducted in Cuddalore district of Tamil Nadu. Panruti taluk was purposively selected since it has the largest area under sugarcane cultivation in Cuddalore district. A sample of 120 sugarcane growers were selected from six revenue villages based on proportionate random sampling method. Data were collected with the help of a well – structured and pre – tested interview schedule. The collected data were properly analysed using statistical procedures and the results are tabulated.

III. FINDINGS AND DISCUSSION

The results on knowledge level on recommended sugarcane cultivation practices by the sugarcane growers are furnished in the Tables 1 and 2.

a) Overall knowledge level on recommended sugarcane cultivation practices

To assess the overall knowledge level of the respondents on sugarcane cultivation practices, necessary data were collected and are furnished in Table 1

Table 1. Distribution of respondents according to their overall knowledge level on recommended sugarcane cultivation practices

(n=120)

S. No	Category	Number	Per cent
1.	Low	30	25.00
2.	Medium	49	40.80
3.	High	41	34.20
	Total	**120**	**100.00**

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The data in Table 1 indicates that above two-fifth of the respondents (40.80 per cent) had medium level of knowledge on recommended sugarcane cultivation practices followed by high (34.20 per cent) and low (25.00 per cent)levels of knowledge. Hence, it could be concluded that 75.00 per cent of the respondents had medium to high level of the knowledge. Majority of the respondents were found to be medium in their characteristics viz., mass media exposure, innovativeness, scientific orientation and economic motivation. This would have motivated them to gain adequate knowledge on the sugarcane cultivation practices.

b) Practice wise knowledge level of respondents

In order to have an in depth understanding about the knowledge level of the farmers, practice-wise knowledge level was also worked out and the results are given Table 2.

Table 2.Distribution of the respondents according to their practice-wise knowledge level on recommended sugarcane cultivation practices

(n=120)

S. No	Practices	Number	Per cent
1.	**Variety**	120	**100.00**
2.	**Planting season**	120	**100.00**
3.	**Sett rate**	99	**82.50**
4.	**Sett treatment**		
a)	The recommended fungicide for sett treatment	77	64.16
b)	The quantity of water required to dissolve these fungicides	85	70.83
c)	Purpose of treating the setts by steam	89	74.16
	Mean percentage		**69.72**
5.	**Spacing**	102	**85.00**
6.	**Gap filling**	95	**79.10**
a)	Number of times of gap filling	110	91.66

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b)	Age of the sett with gap filling	80	66.66
	Mean percentage		**79.16**
7.	**Inter-cropping**		
a)	Recommended inter-crop in sugarcane	112	93.33
b)	Time of planting the inter-crop	109	90.83
c)	Recommended green manure as an inter-crop	80	66.66
d)	Time of planting the green manures	59	49.16
	Mean percentage		**75.00**
8.	**Herbicide application**		
a)	Recommended pre-emergence herbicide	112	93.33
b)	Recommended post-emergence herbicide	108	90.00
	Mean percentage		**91.66**
9.	**Trash mulching**		
a)	Purpose of trash mulching	108	90.00
b)	Time of mulching	78	65.00
	Mean percentage		**78.00**
10.	**Earthing up**		
a)	Purpose of earthing up	102	85.00
b)	Time of earthing up	96	80.00
	Mean percentage		**82.20**
11.	**Detrashing**	110	**91.60**
12.	**Propping**	84	**70.00**
13.	**Manuring**		
a)	Recommended nitrogenous fertilizer per ha.	117	97.50

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b)	Periods of split application of "N" fertilizer	104	86.66
c)	Periods of the split application of potash	111	92.50
d)	Time for repeating foliar spray	116	96.66
	Mean percentage		**93.33**
14.	**Time of Irrigation**	117	**97.50**
15.	**Pest management**		
a)	Recommended pesticide to control early shoot borer	85	70.83
b)	Recommended pesticide to control inter-node borer	87	72.50
c)	Recommended quantity of pesticide / ha	78	65.00
d)	Time of pesticide application	74	61.66
	Mean percentage		**67.50**
16.	**Disease management**		
a)	Fungicide recommended to control red rot	98	81.16
b)	Fungicide recommended to control smut disease	75	62.50
c)	Quantity of fungicide / ha	47	39.16
d)	Suitable for application of fungicide	68	56.66
	Mean percentage		**60.00**
17.	**Bio-control**		
a)	Bio-control agents used in sugarcane cultivation	59	49.16
b)	Number of egg card to be used/acre	55	45.83
c)	Foliar spray in bio control	57	47.50
	Mean percentage		**47.50**
18.	**Harvest**		
a)	Maturity index of sugarcane	120	100.00

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b)	Purpose of ratooning method of harvest	120	100.00
	Mean percentage		**100.00**

It could be observed from the Table 2 that cent per cent of the respondents (100.00 per cent) possessed knowledge about sugarcane varieties, planting season and harvesting.

It was also observed that an overwhelming majority of the respondents possessed knowledge on irrigation (97.50 per cent), manuring (93.03 per cent) and detrashing (91.60 per cent) and herbicide application (91.66 per cent) for sugarcane crop.

Majority of the respondents possessed knowledge on spacing (85.00 per cent), sett rate (82.50 per cent), earthing up (82.50 per cent), gap filling (79.10 per cent), trash mulching (78.00 per cent), inter-cropping (75.00 per cent).

More than half of the respondents possessed knowledge onpropping (70.00 per cent),sett treatment (69.72 per cent), pest management (67.50 per cent) and disease management (60.00 per cent).Knowledge on bio-control agent was possessed by less than half (47.50 per cent) of the respondents. This might be due to lack of awareness about bio control agents and non-availability of bio-control agents. In general, it could be concluded that as all these practices are important for obtaining better yield, sugarcane cultivators acquired adequate knowledge. This finding derives support from the findings of Suganya (2016).

IV. CONCLUSION

This study revealed thatcent per cent of the respondents were found to have more knowledge on variety, planting season and harvesting.An overwhelming majority of the respondents possessed knowledge on irrigation, manuring, detrashing and herbicide application.Majority of the respondents had knowledge on spacing, sett rate, earthing up, gap filling, trash mulching, intercropping, propping, sett treatment, pest management and disease management. Low level of knowledge was found about the use of bio-control agents in sugarcane cultivation.

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