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ADOPTION OF IMPROVED SUGARCANE PRODUCTION TECHNOLOGIES IN MANDYA DISTRICT OF KARNATAKA

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ABSTRACT:

The research study was conducted to understand the impact of sugarcane production technologies. The present study was conducted in Mandya district during the year 2013-14. The study included the ten recommended package of practices of sugarcaneproduction technology viz. improved seed, selecting setts buds, use of fertilizer and plant protection etc. Total 210 farmers (marginal, small, medium and large land holders) were selected for the study. The study recommends that extension services should be strengthened with necessary inputs for improved adoption of sugarcane production technologies by respondents.

KEYWORDS: Adoption, Sugarcane production technologies.

INTRODUCTION:

Sugarcane is one of the most important commercial cropsof the tropical countries and is the main source of sugar in the world. Sugarcane, besides being the main source of sucrose, can yield many by products such as levulose, dextrose, cane wax and aconitic acid. The younger leaves can be fed tocattle. Production of alcohol, yeast and organic chemicals are also possible from molasses, abyproduct of sugar production. The cane yield is markedly influenced by many factors like soil fertility, climate, variety, cultural practices, prevalence of pests and diseases and environmental stress. Among them, pests are known to inflict considerable losses in cane yield as well as sugar output. In sugarcane, due to monoculture, availability of food throughout the year, staggered planting, soft and high sugar varieties and favorable climatic conditions. Some of the minorpests like whitefly, scale insects and sugarcane woolly aphid are attaining the status of majorpests causing notable losses.

STUDY AREA

Mandya district lies between 76° 19' and 77° 20' East Longitude and 12° 13' and 13° 04' North Latitude. The district receives an average annual rainfall of 700 mm. The climate of the district comprises of moderate summers (Max 35°C) and moderate winters (Min 20°C). Mandya district comprises of 7 taluks. The total geographical area of the district is 4, 98,244 Ha, out of which 2,53,067 (50.79%) Ha forms the sown area. More than half of the total land area in the district is put to agricultural use. Total irrigated area is 1,16,901 Ha out of which around 88,000 (75.27%) ha is being irrigated by K.R.Sagar and around 16,000 Ha by Hemavathi reservoir. The rest of the land is irrigated by other sources like tanks, wells and bore wells. With a total population of 1805769, around 5 lakh people are employed in the Agriculture Sector. Mandya District is an agriculturally predominant district in Karnataka state. The farmers in the region adopt improved farm mechanization due to which transformation is taken place in cropping pattern, composition of crops, better grown yield level, ultimately leading to better economic conditions of the people.
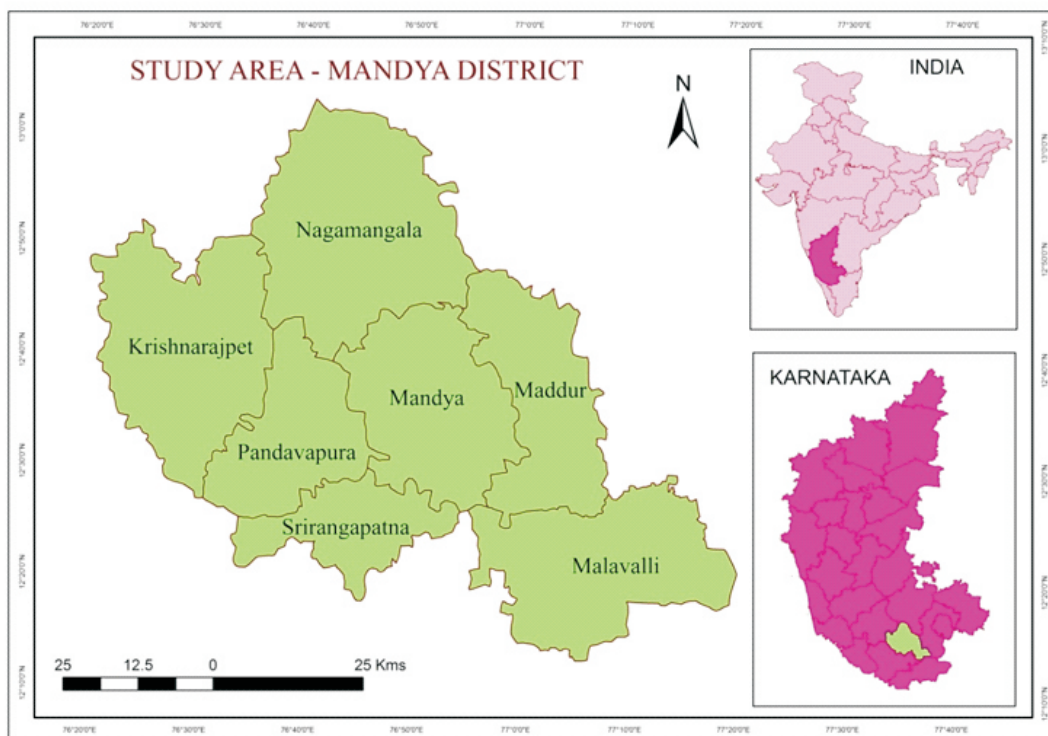
OBJECTIVES

The main objective of the study was to analyse the adoption of improved sugarcane production technologies in Mandya district. The specific objectives were to:

i.Identify the socio-economic characteristics of sugarcane farmers in the study areas;

ii.Determine the adoption of improved production technologies among sugarcane farmers; and

iii.Examine the problems of adoption of improved sugarcane production technologies in the study area.

DATA BASE AND METHODOLOGY

The study was conducted in Mandya district. The data for the study were mainly collected from primary sources. This involved the use of structured questionnaires. From the list so prepared, five villages from each taluks were selected on the basis of maximum area under sugarcane cultivation.Thus, in all 35 villages were selected for present investigation. Total 210 sugarcane growers (70 small, 70 marginal and 70 large farmers) were selected on the basis of random sampling method from the identified villages for the present study. The data collected was subjected to statistical analysis using descriptive statistics which involves the use of frequencies and percentages.

RESULTS AND DISCUSSION

1. Socio-Economic characteristics of respondents

The socio-economic characteristics of the respondents studied include; Gender, Age, Educational Level, Farming experience and Farm size. These are presented in Table 1. The results indicated that majority (83.8%) of respondents were male and only 16.2% were female.

Table 1 also shows that majority (51.0%) of the respondents were within age range of 36-50 years old, indicating that the people involved in sugarcane farming were more than average in terms of age. Less participation was found among those with above 51 years of age representing 18.1% only of the respondents.

Table 1 further show that most of the respondents (29.5%) acquired formal education from illiterate and minimum respondent's graduate (11.0%). The results indicated a fair level of education among the sugarcane farmers in the study area which could have a great impact on adoption of improved sugarcane technology by making their behavior and attitude to be positive towards adoption.

Table 1. Distribution of respondents by socio-economic characteristics (n=210)

S. No.	Socio-economic Variable	Frequency	Percentage (%)
	Gender		
1	Male	176	83.8
2	Female	34	16.2
	Age in Years		
1	Below 35	65	31.0
2	36 - 50	107	51.0
3	51 and Above	38	18.1
	Educational Level		
1	Illiterate	62	29.5
2	Primary School	41	19.5
3	High School	46	21.9
4	Undergraduate	38	18.1
5	Graduate	23	11.0
	Farm Size (Hectares)		
1	Marginal (< 2.5 Acres)	45	21.4
2	Small (2.51-5 Acres)	73	34.8
3	Medium (5.1-10 Acres)	47	22.4
4	Large (> 10.1 Acres)	45	21.4
	Farming Experience (years)		
1	Upto 5 Years	51	24.3
2	6 - 10 Years	82	39.0
3	11 - 25 Years	36	17.1
4	More Than 26 Years	41	19.5

Source: Primary Survey

Table 1 indicated that most (39.0%) of the respondents have farming experience within 6-10 years. The result revealed that the respondents had a reasonable experience. Table 1 showed that majority (34.8%) of the respondents had 2.51-5 Acres of land, while only 21.4% of the respondents had > 10.1 Acres of land. There exists a significant relationship between the adoption of new farm practices and size of land of farmers. Therefore, lack of adequate farm lands by the majority of the respondents in the study area caused hinder adoption of improved technology due to the fact that they have only but little land to strive for their consumption and commercial purposes and might not ready to take risks of trying any new production technology.

2. Stages of Adoption of sugarcane Production Technologies by Respondents

Table 2 shows that there were identified stages in the process of adoption of sugarcane technologies by respondents; when respondents were aware of the improved technologies, when they decided to try the improved technologies on a small scale to test the compatibility of the technologies in their own situation or farm to when they decided to adopt or reject the technologies. This implies that enough creation of awareness has been mounted and the sources of information could be effective among the respondents.

Table 2: Distribution of Respondents by Adoption of Sugarcane Technologies

S. No.	Sugarcane Production Technologies	Percent	Rank
1	Improved Varieties	74.8	V
2	Mechanised farm operations	51.0	VIII
3	Selecting Setts Buds	86.2	II
4	Bio Fertilizer Use	50.0	IX
5	Use of NPK	91.4	I
6	Chemical Control for Insect	73.8	VI
7	Chemical Control for Diseases	76.9	III
8	Gap Filling	67.1	VII
9	Wrapping and Propping	76.7	IV
10	Trash Mulching	21.4	X

Source: Primary Survey

Majority of the respondents tried sugarcane production technologies with respect to use of NPK (91.4%), selecting setts buds (86.2%), chemical control for diseases (76.9%), wrapping and propping (76.7%), improved varieties (74.8%) chemical control for insect (73.8%), gap filling (67.1%) and Mechanised farm operations (51.0%). This implies that appreciable level of trial was being achieved by respondents. The respondents finally adopted sugarcane production technologies which included the major ones; Use of NPK, Chemical Control for Insect & Diseases, improved varieties and Mechanised farm operations.

3. Problems of adoption of sugarcane production technologies by respondents

The problems of adoption of sugarcane production technologies by respondents are presented in Table 3. The study revealed that low rate for sugarcane was the major (96.7%) factor affecting the adoption of sugarcane production technologies by respondents. The second most important constraintis; non availability of farm Machineries (90.0%) affecting the adoption of sugarcane production technologies by respondents.This implies that adoption of sugarcane production technologies among the respondents could be negatively affected, especially where the farmland needs machineries for increased productivity. The third most important (84.8%) constraint of the respondents in adopting sugarcane production technologies was insufficient sugarcane buyers.

Other important constraints identified by respondents in adopting sugarcane production technologies were; do they come in time to pick up sugarcane (82.9%), do not get the loan in time (80.5%), lack of awareness of improved technologies (78.6%), poor extension services (69.0%), shortage of labour (63.8%), unavailability of transport service (63.8%), unavailability of fertilizer (60.5%) and insufficient land for cultivation (55.7%).

Table 3: Distribution of respondents by Problems of Adoption of Sugarcane Production Technologies

S. No.	Problems	Frequency	Percentage (%)
1	Lack of awareness of improved technologies	165	78.6
2	Unavailability of improved seed buds	104	49.5
3	Poor extension services	145	69.0
4	Insufficient land for cultivation	117	55.7
5	Shortage of labour	134	63.8
6	Do they come in time to pickup sugarcane (Sugar Factories)	174	82.9
7	High cost of chemicals	89	42.4
8	Unavailability of fertilizer	127	60.5
9	Non availability of farm Machineries	189	90.0
10	Low rate for sugarcane	203	96.7
11	Shortages of sugarcane buyers	178	84.8
12	Do not get the loan in time (Banks)	169	80.5
13	Unavailability of transport service	134	63.8

Source: Primary Survey

However, the least important (42.4%) constraint of adoption of sugarcane production technologies by respondents was high cost of chemicals. Farmers may desire to adopt new practices but are constrained by the inability of the extension personal to reach the farmers. Other factors tends to make farmers stick to old practice may be high cost of agricultural innovations, unavailability, risk involved ignorance of existence of new innovations plus the conservative attitudes of many farmers (Agbamu, 2006; Chinaka et al., 2007).

CONCLUSION

The study revealed that majority of respondents were aware of sugarcane production technologies in the study areas. But there is an urgent need to increase awareness on the extent of adoption of sugarcane growers about recommended sugarcane production technology, through proper utilization of source of information, extension contact, exhibition, kisan mela and training programmed in different aspect should be conducted by the concerned agencies. This will not only improve the farm income but also makes sugarcane cultivation attractive to the younger generations to come.

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