

A Study on the Adoption Level of Sugarcane Cultivation Practices in Udupi Taluk of Coastal Karnataka

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Abstract: A study conducted during 1993 in Udupi Taluk of Dakshina Kannada District on the adoption of Sugarcane cultivation practices revealed that cent percent of the farmers adopted recommended variety. Majority of the farmers adopted recommended sets rate and earthingup. Partial adoption was observed in case of NPK application. A great majority of the farmers did not adopt the most crucial practices of setts treatment, chemical weed control and trash mulching. A high significant association was observed between adoption level and the yield. Majority of the farmers belonged to medium level of adoption and harvested medium yield. Education, land holding and socio-economic status were found to have highly significant relationship with adoption. The major constraints identified for the non-adoption or partial adoption of recommended practices were lack of knowledge on number of setts, fertilizer dose and chemical weed control. Fifty percent of the farmers perceived 3 feet spacing was wider and high cost of the fertilizers and chemicals for partial adoption of fertilizers and chemicals.

Introduction

Sugarcane (*Saccharum officinarum*) is an important commercial field crop of Dakshina Kannada District in Karnataka, occupying an area of 1969 ha with the production of 91000 tonnes per annum. The average yield of sugarcane in the district is 70-75 tonnes/ha, as against 140 tonnes/ha being the potential yield in research stations and 90-100 tonnes/ha yield obtained by some of the progressive farmers under similar conditions. This indicates that, there is a wide gap between the yields obtained by the research station and the progressive farmer to that of majority of the farmers. The soils of the region have poor fertility status, but respond well to the management practices. There is no alternative but to enhance the productivity level by adopting recommended technologies. The state department of Agriculture and sugar factory located at Brahmavar have taken up several developmental programmes to promote higher production. The impact of these with the increase in the adoption level is not well established in this region. Therefore, this study was taken up to study the adoption level of the sugarcane growers, on recommended package of practices and the relationship of personal and socio-economic characteristics of farmers with their adoption level.

Material and Methods

The six villages viz., Aroor, Cherkadi, Handadi, Shiriyur, Uppinakote, and Upper of Udupi Taluk were selected for the study considering the maximum area under sugarcane cultivation. From each village 20 farmers were selected randomly, thus constitute a total sample of 120 farmers. The data were collected through structured interview schedule which includes adoption of package of practices, personal and socio-economic characteristics. The adoption index followed by Singh and Singh (1984), was made use of and based on the adoption score obtained by the respondents, their categorization was done as high, medium and low adoption with the help of mean and standard deviation. The actual yield obtained by each farmer was taken into consideration and classified as low, medium and high using mean and standard deviation and chi-square was used to find out the association between the adoption level and yield. The data on adoption of each recommended practices and reasons for non-adoption were quantified using simple percentages. The correlation-coefficient was employed to find out the degree of relationship between the adoption level of recommended practices and the characteristics of farmers.

Results and Discussion

It is observed from the table 1, that cent percent of the farmers adopted the recommended variety. Majority of the farmers adopted recommended setts rate (67.5%) and earthing up (74.17%). Similar results were observed by Mahadevaiah (1987) in his study on sugarcane in Mandya district. However, the practices, viz. application of farmyard manure (69.17%), recommended level of Nitrogen (75.83%), Phosphorus (79.17%) and Potassium (60.83%) were partially adopted by the farmers. As far as the setts treatment, recommended spacing, chemical weed control and trash mulching were concerned, 71.67, 33.33, 89.17, and 87.5 percent of farmers were not at all adopting.

A perusal of the data in table 2 indicates a significant association between the adoption level and yield. From the overall adoption of the improved practices, it was found that the majority of the farmers belonged to medium adoption level (50.84%) followed by high (34.16%) and low (15%). Majority of the farmers harvested medium level (44.17%) followed by low (30%) and high (25.83%) yield level.

Table 3 presents the relationship between socio-personal characteristics and adoption level of recommended practices. The 'r' value shows that education, land holding and socio-economic status were positively and significantly related with the adoption of recommended practices. These findings were in conformity with the findings of Kittur (1976), Gaurha and Pyasi (1983) and Mahadevaiah (1987). While, the relationship of social participation and extension contact were positive but not significant with the adoption level and these findings were in agreement with the findings of Kittur (1976) and Sakthivel (1979).

The reasons for non-adoption/partial adoption of the recommended practices are presented in the table 4. It was observed that lack of knowledge (33.33%) is to be the main reason for not adopting the recommended setts rate. The reasons assigned for non-adoption of recommended pre-treatment of setts were lack of knowledge (45.83%), lack of conviction (12.5%), high cost of chemicals and non-availability of chemicals (6.66%). Half of the farmers perceived 3 feet spacing was wider and lack of knowledge (31.66%) were the major constraints for adopting recommended spacing. As far as fertilizer application was concerned, 40.83 per cent of the farmers were having lack knowledge on proper dosage, closely followed by high cost of fertilizer (39.17%) and non-availability of fertilizer in-time (20%) as expressed by the farmers. Non-adoption of chemical weed control due to lack of knowledge (43.33%) followed by perceived as not necessary (20%), lack of conviction (18.33%) and high cost (9.17%).

The general constraints faced by the farmers were water scarcity during summer (53.33%), labour scarcity (46.66%), non-availability of credit facility in-time (10%) and transportation (8.33%).

The variation in the adoption of recommended practices by sugarcane growers calls for the intensification of educational efforts for adoption of key practice such as setts treatment, spacing, chemical weed control and fertilizer dose to increase the productivity. The other important implication happens to be the need for conducting and using effective demonstration for credible and quick dissemination of technical knowledge, training programmes. Field days would go a long way in convincing better adoption of these practices by majority of the sugarcane growers.

Table 1. Expend of adoption of improved practices of sugarcane by the farmers.

Sl.No.	Practices	Adopted		Partially adopted		Not adopted	
		No.	%	No.	%	No.	%
1.	Use of Improved Variety	120	100.00	-	-	-	-
2.	Recommended setts rate	81	67.50	35	29.17	4	3.33
3.	Treatment of setts	34	28.33	-	-	86	71.67
4.	Recommended Spacing	23	19.17	57	47.50	40	33.33
5.	FYM application	31	25.83	83	69.17	6	5.00
6.	Recommended N	29	24.17	91	75.83	-	-
7.	Recommended P	13	10.83	95	79.17	12	10.00
8.	Recommended K	43	35.83	73	60.83	4	3.33
9.	Chemical weed Control	13	10.83	-	-	107	89.17
10.	Earthing Up						
	i) Two times	31	25.83	-	-	-	-
	ii) Three times	89	74.17	-	-	-	-
11.	Trash mulching	15	12.50	-	-	105	87.50

Table 2. Association between adoption level of improved practices and the yield.

Adoption Level	Yield level							
	Low		Medium		High		Total	
	No.	%	No.	%	No.	%	No.	%
Low	14	11.67	4	3.33	-	-	18	15.00
Medium	14	11.67	29	24.17	18	15.00	61	50.84
High	8	6.66	20	16.67	13	10.83	41	34.16
Total	36	30.00	53	44.17	31	21.83	120	100.00

$\chi^2 = 19.873^{**}$ ** = Significant at 1% level

Table 3. Relationship between socio-personal characteristics of the farmers and adoption level of improved practices.

Socio-personal characteristics	Co-efficient of correlation (r)
Age	-0.233*
Education	0.276**
Land holding	0.410**
Socio-economic status	0.337**
Social participation	0.167 NS
Extension contact	0.153 NS

* - Significant at 5% level

** - Significant at 1% level

NS - Not significant

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Table 4. Reasons for non-adoption/partial adoption of improved practices.

Reasons	Number	Per cent
A. Recommended setts rate		
i) Lack of knowledge	40	33.33
B. Setts treatment		
i) Lack of knowledge	55	45.83
ii) Lack of conviction	15	12.50
iii) High cost of chemicals	8	6.66
iv) Non-availability of chemicals	8	6.66
C. Spacing		
i) Perceived as 3' spacing is wider	60	50.00
ii) Lack of knowledge	38	31.66
D. Fertilizers		
i) Lack of knowledge	49	40.83
ii) High cost	47	39.17
iii) Non-availability of fertilizers in time	24	20.00
E. Chemical weed control		
i) Lack of knowledge	52	43.33
ii) Perceived as not necessary	24	20.00
iii) Lack of conviction	22	18.33
iv) High cost	11	9.17
F. General constraints		
i) Water scarcity during summer	64	53.33
ii) Labour scarcity	56	46.66
iii) Non-availability of credit	12	10.00
iv) Salinity problem	12	10.00
v) Transportation of cane to factory	10	8.33