

**RESEARCH ARTICLE :**

Knowledge and adoption level of improved cultivation practices by sugarcane farmers in Belagavi and Bagalkot district of Karnataka

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SUMMARY : The present study was conducted in Belagavi and Bagalkot district in north Karnataka during the year 2018-19 with the objectives to assess the knowledge and adoption level of improved cultivation practices by sugarcane farmers. *Ex-post-facto* research design was undertaken for the present study. The findings of the study revealed that most of the respondents (38.33%) belong to medium knowledge level followed by 35.83 and 25.84 per cent of respondents belonged to low and high knowledge level, respectively. Majority of the respondents (38.33 %) belonged to medium adoption level followed by 35.00 and 26.67 per cent of respondents belong to low and high adoption level, respectively.

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KEY WORDS :

Knowledge, Adoption

BACKGROUND AND OBJECTIVES

Sugarcane (*Saccharum officinarum*) is the prime Indian sugar source and holds a leading position as a cash crop. India is the second largest area under sugarcane in the world. Sugarcane is the important crop for earning the foreign exchange. The sugar industry has been a centre of attention for socio-economic growth of rural regions of India by mobilizing rural resources, creating employment and generating the farm income. Sugarcane gives raw material to the second largest agro-based industry after textile. A portion of the sugar processing factories have

broadened by-products basis industries and have invested and set up natural substance plants, paper, refineries, cogeneration plant and alcohol production lines. It directions more prominent criticalness because of their surprising commitment to our nation economy through foreign trade earnings. Now-a-days, the productivity of these yields has raised, however, the magnitude has been exceptionally little. Sustainable manufacturing of such cash crops is essential in order to boost our domestic revenue due to its significance in forex revenues. The present study was undertaken with the objective: To study the knowledge and adoption level of improved

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cultivation practices by sugarcane growers.

RESOURCES AND METHODS

In the present investigation, *ex-post-facto* research design was used. The study was conducted in Belagavi and Bagalkot district of Karnataka during the year 2018-19. Belagavi and Bagalkot district has been purposively selected for the study because of the highest sugarcane crop in this area. In Belagavi district, two taluks *viz.*, Gokak and Athani were selected based on highest area and in Bagalkot district, *viz.*, Jamkhandi, Badami, were selected based on highest area. Three village from each taluk selected based on the highest area and production, from each village five respondents will be selected randomly. Thus, the total sample size will be 120.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussion have been summarized under following heads.

Knowledge level of improved cultivation practices by sugarcane farmers:

It is revealed in the Table 1 that, the knowledge of respondents about individual cultivation practices of sugarcane. Cent per cent of the respondents had correct knowledge about ploughing and method of planting. The possible reason may be, sugarcane is the main cash crop in this area. So every individual tries to acquire a more knowledge about recommended practice.

Majority of sugarcane growers found to have correct knowledge about NPK application (85.83%), spacing recommended (83.33%), woolly aphid symptoms (75.83%), root grub control (69.16%), pesticide to control woolly aphid (66.66%), quantity of FYM (68.33%), setts required (59.17%), age of setts for planting (51.67%), temperature used for treating the setts (50.00%), pre-emergent herbicide (47.50%), the amount of urea sprayed on leaves during summer (42.50%), green manure incorporation (42.50%), post-emergent herbicide (40.00%). The reasons that could be attributed to the fact that, sugarcane is commercial crop and being grown over a period of time in these area and farmers are familiar with these practices, which neither requires special skill nor much investment to know.

Least knowledge level was observed in case of cultivation practices like application of borax (39.17%),

vermicompost application (32.50%), use of bio fertilizer (32.50%), drip irrigation (35.00%), zinc application (31.67%), ammonium molybdate (30.00%), number of ratoon crop is economically beneficial (29.17%), iron sulphate application (27.50%), termite control (25.00%), magnesium sulphate application (24.16%), copper sulphate application (20.83%), woolly aphid resistant variety (20.00%), stunting (8.33%). The possible reason may be lack of knowledge and the complexity involved in understanding above practices and less regular contact with the extension personnel might be the reason for least knowledge level of the above practices.

The above findings could also be attributed to factors such as, education level of respondents, medium level of participation in activities like demonstration, training, exhibitions, use of mass media and literatures. The other factors may be that sugarcane farmers have medium level of experience in the study area. This might have helped the growers to know basic practices of sugarcane cultivation, which are concerned with development and dissemination of sugarcane technologies in the northern parts of Karnataka. Moreover, farmers were found to have linkage with fellow farmers from other districts, Agriculture department and UAS Dharwad scientists for technical guidance. All these factors might have helped them to acquire minimum knowledge regarding cultivation practices of sugarcane. The above findings are in consonance with findings of Rathod (2005).

Adoption level of sugarcane farmers about individual cultivation practices:

It is revealed in the Table 3 that, ploughing and method of planting were followed by cent per cent of farmers as per recommendation because of having the cent per cent knowledge and benefits about these practices, all the farmers adopted these practices. 80.83 per cent of respondents adopted NPK application as per recommendation the reason given by the respondents for more application of NPK fertilizer were that, there would be wastage of fertilizer due to frequent irrigation. Further, the common tendency prevailing among the farmers is that, application of fertilizer could increase the sugarcane yield is another reason.

Whereas, 32.50 per cent of respondents found partially adopted the recommended FYM application reasons for the partial adoption were non-availability of FYM in required quantity at reasonable rate and at required time.

Only 33.33 per cent of respondents found full adoption of sett treatment and 66.67 are not practicing the sett treatment because some farmers are not having the proper knowledge and benefit of seed treatment. Only 25.83 per cent of respondents adopted drip irrigation along with 20.00 per cent of respondents fully practicing fertigation. Due to the availability of water channel as

well as to adopt the drip irrigation and fertigation more investment is done at the starting. So, majority of farmers will not adopting these practices.

Only 13.33 per cent of respondents fully adopted recommended biofertilizer and only 10.83, 05.83 and 5 per cent of respondents made full adoption of practices of green manure application, vermicompost application

Table 1: Knowledge level of improved cultivation practices of sugarcane

Sr. No.	Package of practices	Correct knowledge		No knowledge	
		F	%	F	%
1.	Ploughing	120	100.00	0.00	0.00
2.	Methods of planting	120	100.00	0.00	0.00
3.	Age of setts for planting	62	51.67	58	48.33
4.	Temperature used for treating the setts	60	50.00	60	50.00
5.	Setts required	71	59.17	49	40.83
6.	Spacing recommended	100	83.33	20	16.67
7.	Quantity of FYM	82	68.33	38	31.67
8.	Vermicompost application	39	32.50	81	67.50
9.	Use of Bio fertilizer	39	32.50	81	67.50
10.	Pressmud compost	31	25.83	89	74.17
11.	Green manure incorporation	51	42.50	69	57.50
12.	NPK application	103	85.83	17	14.17
Micronutrients (recommended per acre)					
13.	Iron sulphate	33	27.50	87	72.50
14.	Borax	47	39.17	73	60.33
15.	Ammonium molybdate	36	30.00	84	70.00
16.	Magnesium sulphate	29	24.16	91	75.84
17.	Copper sulphate	25	20.83	95	79.17
18.	Zinc	38	31.67	82	68.33
19.	The amount of urea sprayed on leaves during summer	51	42.50	69	57.50
20.	Drip irrigation	42	35.00	78	65.00
Weed management					
21.	Pre-emergent herbicide	57	47.50	63	52.50
22.	Post emergent herbicide	48	40.00	72	60.00
Pest management (Control measures)					
23.	Wooly aphid symptoms	91	75.83	29	24.17
24.	Pesticide to control wooly aphid	80	66.67	40	33.33
25.	Wooly aphid resistant variety	24	20.00	96	80.00
26.	Shoot borer symptom	70	58.33	50	41.67
27.	Rootgrub control	83	69.17	37	30.83
28.	Termite control	30	25.00	90	75.00
Disease management (Control measures)					
29.	Red rot	65	54.17	55	45.83
30.	Stunting	10	08.33	110	91.67
31.	Number of ratoon crop is economically beneficial	35	29.17	85	70.83

and press mud application, respectively. Majority of respondents 86.67 per cent of them not adopted liquid fertilizer application practice due to the possible facts

that non-availability, lack of knowledge and complexity involved in this practices.

In the micronutrients about 94.17, 93.34, 88.34,

Sr. No.	Category	Frequency	Percentage
1.	Low (<44.14)	43	35.83
2.	Medium (44.14-46.57)	46	38.33
3.	High (>46.57)	31	25.84
	Total	120	100.0

Mean =45.35 SD = 2.42

Sr. No.	Package of practices	Full adoption		Partial adoption		No adoption	
		F	%	F	%	F	%
1.	Ploughing	120	100	0	0	0	0
2.	Method of planting	120	100	0	0	0	0
3.	Sett treatment	40	33.33	0	0	80	66.67
4.	Spacing followed	90	75.00	0	0	30	25.00
5.	FYM application	81	67.50	39	32.50	0	0
6.	Vermi-compost application	7	05.83	20	16.67	93	77.50
7.	Biofertilizer application	16	13.33	42	35.00	62	51.67
8.	Press mud application	06	5.00	19	15.83	95	79.17
9.	Green manure application	13	10.83	29	24.17	78	65.00
10.	NPK application	97	80.83	23	19.67	0	0
	Micronutrients						
11.	Iron sulphate	3	2.50	11	9.16	106	88.34
12.	Borax	7	5.83	19	15.83	94	78.34
13.	Ammonium molybdate	0	00	7	5.83	113	94.17
14.	Magnesium sulphate	1	0.83	7	5.83	112	93.34
15.	Copper sulphate	3	2.50	12	10.00	105	87.50
16.	Zinc	8	6.67	13	10.83	99	82.50
17.	Liquid fertilizer application	04	3.33	12	10.00	104	86.67
18.	Fertigation	24	20.00	0	0	96	80.00
19.	Drip irrigation	31	25.83	0	0	89	74.17
	Weed management						
20.	Pre-emergent herbicide	40	33.33	10	8.33	70	58.33
21.	Post-emergent herbicide	41	34.17	05	4.17	74	61.67
	Pest management						
22.	Wooly aphid	22	8.33	64	53.33	34	28.33
23.	Root grub	08	6.67	21	17.50	91	75.84
24.	Termite	13	10.83	25	20.83	82	68.33
	Disease management						
25.	Red rot	19	15.83	44	36.67	57	47.50
26.	Grassy stunting	0	0	20	10.00	100	90.00
27.	Taking the ratoon crop	25	20.83	0	0	95	79.17

87.50, 82.50 and 78.34 per cent of respondents not adopted ammonium molybdate, magnesium sulphate, iron sulphate, copper sulphate, zinc, borax application, respectively due to the possible facts that non-availability, lack of knowledge and complexity involved in this practices.

In pest management, 18.33 per cent of respondents fully adopted woolly aphid control measure, 6.67 per cent of the respondents fully adopted the recommended practices to control root grub and about 68.33 per cent of respondents not adopted any control measures for termite attack. The possible fact that complexity, lack of knowledge, lack of training may be the reason for not adopted proper management practices.

In disease management about 15.83 per cent of respondents fully adopted red rot control measure and 90.00 per cent of the respondents not adopted control measure for grassy stunt disease. Due to the lack of knowledge and complexity involved in the management practice hinders the farmers to control the disease.

On as whole the possible explanation may be put in terms of the fact that, the entire belt of Belagavi and Bagalkot district is well suited for sugarcane cultivation and growing sugarcane is comparatively profitable and more remunerative. While, the growers meet the technical personnel experts of Agriculture department and obtain the required technical information on improved cultivation practices. In addition, growers were educated through capacity building programmes as a result their knowledge also enhanced because of their characteristics innovative proness. The above findings are in consonance with findings of Rathod (2005).

Overall knowledge level of improved practices of sugarcane cultivation:

It is apparent from the Table 2 that, about 38.33 per cent of respondents belongs to medium knowledge level followed by 35.83 and 25.84 per cent of respondents belonging to low and high knowledge level, respectively. It would be reflects to their mass media exposure,

educational level, extension participation, annual income of the farmers and their willingness to gather more information regarding improved sugarcane practices. Knowledge is extremely affected by several variables, such as the exposure of people to various official and informal sources, the interest of people in the subject matter. It was noticed that participants were part of medium extension participation and extension contact. These factors directly influenced information gathering as they are proven channels of information transfer used by farmers over a period of time. The above findings are in consonance with findings of Yashwanth (2018).

Overall adoption level of improved practices of sugarcane cultivation:

From the Table 4 it can be revealed that, majority of the sugarcane growers considerably about 38.33 per cent come under medium adoption level. The findings will be attributed to data possessed by the sugarcane farmers based on the extension participation and the medium level of the innovativeness. Adoption of technology is directly proportional to knowledge. It is found that knowledge of the sugarcane farmers was satisfactory which will intern reflects in the adoption of the suitable practices. Knowledge of the farmers is also depends on the contact with extension personnel and mass media exposure. All these above factors have been influenced in the overall adoption. The above findings are in consonance with findings Rajashekar Reddy (2006).

Conclusion:

Majority of the farmers were found to be in medium level of knowledge and adoption category. Therefore, there is still scope for enhancement of sugarcane farmer’s financial performance by teaching and training them by suggested farming methods to obtain greater income. Thus, development departments should plan and execute suitable extension policies to educate farmers about recommended cultivation methods to enhance economic efficiency by implementing enhanced sugarcane

Table 4: Overall adoption level of improved cultivation practices of sugarcane (n=120)

Sr. No.	Category	Frequency	Percentage
1.	Low (<20.17)	42	35.00
2.	Medium (20.17-23.20)	46	38.33
3.	High (>23.20)	32	26.67
	Total	120	100.0

Mean =21.69 SD = 3.03

cultivation methods apart from subsidy and financial aid interns from public support.

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REFERENCES

Rajashekar Reddy, K. P. (2006). A study on management

efficiency of sericulturists in northern Karnataka. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, Karnataka (India).

Rathod, Devraj Naik (2005). A study on knowledge and adoption pattern of improved practices of sugarcane in Bidar district. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, Karnataka (India).

Yashwanth (2018). Entrepreneurial behaviour of sericulture farmers in north Karnataka, M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, Karnataka (India).

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