



Technological Knowledge and Adoption Behaviour of Sugarcane Growers of Surguja District, Chattisgarh, South East Central India

KEYWORDS

Sugarcane, Extension, Farming technology, Cultivation, Knowledge, Adoption, Behaviour, Farmers

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ABSTRACT *The present study was conducted in six sugarcane growing villages of Surguja district and data were collected from 130 respondents through interview scheduled during 2009-10. The result reveals that the maximum irrigated area was under badi/ upland situation which is best and suitable for sugarcane cultivation. The overall extent of knowledge and adoption level of respondents towards production technology had medium level. Maximum and high level of technological gap was zinc sulphate application followed by compost use, disease and pest control, wrapping of plant and soil treatment. The traditional attitude, lack of technical knowledge of respondents, grazing by domestic and wild animal, lack of marketing facilities, wrong application of insecticide and severe problem of termite was the major problems of sugarcane cultivation.*

Introduction

India is one of the most promising sugarcane producing countries in the world. In Surguja district, sugarcane production area is very limited (724ha) in previous decade, but recently some of the blocks of district increasing and farmers adopt as commercial crop under upland farming situation. Although enough viable and adoptive technologies have been developed but many of these have not reached to the growers level. Moreover, they are unaware of the technology available and properly not adopted. Hence, the present research study was under taken with the following two objectives:

- To study the socio-economic attributes of respondents and their level of Knowledge and adoption of sugarcane production technology.
- To find out the adoption gap between recommended technology and actual adoption level of sugarcane crop among the respondents.

Materials and Methods

Out of total 19 blocks of Surguja districts, Surajpur, Pratapur & Lundra blocks were randomly selected, due to having maximum sugarcane area. Two sugarcane growing villages of each blocks and total six villages were randomly selected i.e., Kalyanpur (V1), Podipa (V2), Khadganwa (V3), Kerta (V4), Batwahi (V5), Lamgaon (V6). A list of sugarcane growers of each selected village was prepared and 20% of total sugarcane growers were randomly selected. Finally 130 sugarcane growers had considered as respondents and data was collected through interview scheduled during 2009-10. This particular study was the very first of its kind in Chhattisgarh.

Results and Discussions

Socio-economic attributes

study indicates that the maximum per cent of respondents were belonging under young age group, up to higher secondary school certificate level of education, scheduled tribe caste, joint family system, male dominated population having small size of land holding, no social participation in any organization, low level of contact with extension personal, medium level of sugarcane growing experience and obtained sugarcane seed from own village. The occupied area of respondents have maximum percentage in low land banded farming situation in total but having maximum percent of irrigated area was under badi/upland situation which is best and suitable for sugarcane cultivation (Anon., 2003).

Sugarcane production technology knowledge

The data presented in Table –1 indicated that majority, 66.93 percent of respondents were belonging under medium level of sugarcane production technology knowledge followed by high level (17.69%) and low level of technical knowledge (15.38%). Maximum percentage (72.73%) medium level of knowledge respondents had observed under marginal size of land holding. The overall level of knowledge of respondents and their size of landholding was found non significant. Among 12 practices of sugarcane production knowledge level of respondent were observing in high level extent of knowledge (76-100%) under land preparation (92.30%) followed by harvesting (88.84%), earthing of sugarcane plant field (84.80%) and irrigation schedule (80%). Similarly, under medium level of knowledge (51-75%) of respondent were found under sowing time (71.92%) followed by method of sowing (67.50%), Nitrogen application (64.61%), phosphorous (64.23%), seed treatment (63.65%), compost application (60.38%), soil treatment (60%), wrapping of plant (58.84%) and improved seed (56.11%). In category of low level of knowledge (0-50%) respondents were observing under the practices as weed control (48.84%) followed by insect control (46.34%), Potash application (39.23%) and disease control (38.65%). The overall technical knowledge of respondents was observed as medium level (62.24%). About 38 percent overall technical knowledge gap may be required for minimizing through training and demonstration to the growers.

Sugarcane production technology Adoption

Majority (73.85%) of respondents were belonging under medium level of adoption in overall technology followed by low level (13.85%) and high level (12.30%) of adoption (Table- 1). The overall trend of adoption of each categories of size of holding was similarly observed and no significant variation was found Maximum score (776) was observed under semi-medium level of adoption followed medium level (650), low level (545), Nil level (329) and high level (85). High level of adoption among respondent were observing under land preparation (7.6.5%) practice only. Medium level of extent of adoption of technology among respondents had harvesting (74.04%), followed by earthing (64.42%), sowing time (63.27%), method of sowing (59.04%), seed treatment (54.42%), Irrigation (54.04%), phosphorous application (52.3%), improved seed (50.38%) and nitrogen application 50.19 percent respectively. In case of semi medium level adoption (26-50%) of respondents was notice under weed control followed by soil treatment, wrapping, insect and dis-

ease control. In low level of extent of adoption (1-25%) of respondents was observed under potash application followed by compost/FYM and zinc sulphate application in sugarcane. The overall extent of adoption of sugarcane practices was fair as 45.44 percent. Similar finding were also observed by Wasnik (1995). Hence, technological improvement should be popularised and there is a need to develop extension linkage in the study area. Adoption gap in different practices of sugarcane cultivation of respondents have been found in similar results on expected & observed score i.e., (0-100). High

level of adoption gap of respondents were recording in zinc sulphate application (85.38%) followed by compost application (84.65%), disease control (76.15%), potash application (74.61%), insect control(70%), wrapping of plants (54.61%) and soil treatments (51.53%) respectively incase of medium level of adoption gap of respondents observed in all practices except land preparation practices. The overall majority of respondent were belonging under medium level of adoption gap (58.93%) followed by high level of gap (37.35%) and low level of adoption gap (3.72%).

Table-1: Distribution of respondents and their knowledge and adoption level with technological gap under different practices of sugarcane cultivation.

S. No	Practice	Ob-tained Score	Knowl-edge %	Rank level	Ob-tained Score	Adoption %	Rank level	Technological gap		
								High (> 75)	Medium (26-75)	Low (<25)
1	Land preparation	480	92.30	H1	398	76.50	A	00 (0.00)	98 (75.38)	32 (24.62)
2	Soil treatment	312	60.00	M4	181	34.81	C2	67 (51.53)	62 (47.69)	01 (0.76)
3	Improved seed	297	57.11	M9	262	50.38	B2	31 (23.84)	99 (76.15)	- (00)
4	Sowing time	374	71.92	M1	329	63.27	B3	04 (3.07)	121 (93.07)	05 (3.84)
5	Seed treatment	331	63.65	M5	283	54.42	B5	27 (20.76)	100 (76.92)	03 (2.30)
6	Method of sowing	351	67.50	M2	308	59.23	B4	13 (10)	116 (89.23)	01 (0.76)
7	Application of FYM & fertilizer									
a.	Compost /FYM	314	60.38	M6	83	15.96	D2	110 (84.61)	19 (14.61)	01 (0.76)
b.	Nitrogen	336	64.61	M3	261	50.19	B9	33 (25.38)	95 (73.07)	02 (1.53)
c.	Phosphorous	334	64.23	M4	272	52.31	B7	30 (23.07)	9 (74.61)	03 (2.30)
d.	Potash	204	39.23	L3	123	23.65	D1	97 (74.61)	33 (25.38)	00 (0.00)
e.	Zinc sulphate	172	33.07	L5	72	13.85	D3	111 (85.38)	18 (13.84)	01 (0.76)
8.	Inter culture									
a.	Weed control	254	48.84	L1	202	38.84	C1	61 (46.92)	68 (52.30)	01 (0.76)
b.	Earthing	441	84.80	H3	335	64.42	B2	07 (5.38)	114 (87.69)	09 (6.92)
9.	Irrigation	416	80.00	H4	281	54.04	B6	20 (15.38)	105 (80.76)	05 (3.84)
10.	Wrapping of plant	306	58.84	M8	179	34.42	C3	71 (54.61)	55 (42.30)	04 (3.07)
11.	Plant protection									
a.	Insect control	241	46.34	L2	163	31.54	C4	91 (70.00)	38 (29.23)	01 (0.76)
b.	Disease control	201	38.65	L4	140	27.12	C5	99 (76.15)	30 (23.07)	01 (0.76)
12.	Harvesting	462	88.84	H2	385	74.04	B1	02 (1.53)	111 (85.38)	17 (13.07)
	Total	5826	62.24	M	4252	45.44	C	874 (37.35)	1379 (58.93)	87 (3.72)

Conclusion

Study can be concluded that the overall extent of knowledge of sugarcane of respondents had under medium level and overall extent of adoption level was also similar. Maximum and high level of technological gap among sugarcane growers had under zinc sulphate application followed by compost application, disease control, Potash application, insect control, wrapping of plant and soil treatment. Under medium level of adoption gap majority of respondents were observed in all practices of sugarcane cultivation, except land prepara-

tion. The overall majority of respondents were belonging under medium level of adoption gap followed by high level and low level of adoption gap.

Future suggestions

For minimizing the adoption gap of sugarcane technology among respondents of study area, increasing the technical knowledge and changing the traditional attitude of farmers through training – demonstration and enhancing the social participation of respondents and activating the extension

system. Minimize the grazing problem and facilitate the marketing of sugarcane by the opening of sugar factory of study area.

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