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Adoption of progressive and non progressive sugarcane growers association with profile characteristics and their constraints

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Abstract
Present study was conducted in Bagalakot district of northern Karnataka during 2015-16. To know the adoption of improved cultivation practices of progressive and non progressive sugarcane growers and to know the association between profile characteristics and adoption. The study revealed that majority of progressive (55.00%) and non progressive farmers (60.00%) were found in high and low adoption category. It is also clear that education, annual income, extension contact and mass media participation exhibited positive and significant relationship with adoption of improved sugarcane cultivation practices among progressive sugarcane growers. Whereas, only mass media participation among non progressive farmers exhibited positive and significant relationship with adoption of improved cultivation practices of sugarcane. Whereas 'delayed in payment' was the most important constraints faced by both progressive (81.67%) and non progressive (86.66%) farmers.

Keywords: Adoption, association, constraints, sugarcane growers

Introduction
India is the seventh largest country in the world with geographical area of 328.73 million hectares representing 2.45 per cent of the world's geographical area. Agriculture is the predominant sector of Indian economy that meets the basic requirements such as food, clothing and shelter of the people, which contributes nearly 26.00 per cent to the national income. India has a wide diversity of crops, among them food grains occupy a major portion of the land area, while sugarcane and fibre crops occupy relatively lesser acreage. Sugarcane is one of the important commercial crops of the world.

Karnataka is blessed with a favourable climatic conditions for the cultivation of sugarcane, hence the area under sugarcane has expanded to 4.25 lakh ha with a production of 35.73 mt and productivity of 84.07 t/ha (2012-13). The increased production can be realized as a result of adoption of improved cultivation technologies. Still there is a wide gap between the potential yield (>200 t/ha) and realised yield (66.94 t/ha). Many of the improved technologies failed to be adopted by the farmers may be due reluctance of the farmers to adopt new practices, the poor capacity to persuade farmers to adopt them, limited availability of varieties and necessary inputs at right time etc... In some instances inspite of great extension efforts we observed a negligible or low rate of adoption of improved technologies by the farmers. This shows the adoption is not only determined by the availability of technologies but also on various factors. Keeping the above facts in mind, the present study was designed to understand how farmers could adopt improved cultivation practices of sugarcane.

Methodology
The study was conducted purposively Bagalkot district of North Karnataka. Out of ten taluks in district five taluks were selected. From each taluks four villages and from the list of farmers three progressive farmers (whose tonnage is above 70) and three non progressive farmers (whose tonnage is below 70) were selected using simple random procedure. From each village to constitute the total population of 120 farmers, comprising 60 progressive and 60 non progressive sugarcane farmers. A draft interview schedule against set objectives for measuring the variables of the study was prepared. The data were collected through personal interview method and data was processed and analyzed with the help of suitable statistical tools.

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Results and Discussion
Overall adoption of improved cultivation practices of progressive and non progressive sugarcane growers
The table 1. indicates that majority of progressive (55.00%) and non progressive farmers (60.00%) were found in high and low adoption category, respectively. Further, considerable percentage (25.00%) of progressive and non progressive farmers (21.66%) were found in medium adoption category followed by 20.00 per cent of progressive farmers were found in low adoption and 18.33 per cent of non progressive farmers were found in high adoption category.

Association between adoption and profile characteristics sugarcane growers
The zero order correlation was worked out between the adoption of improved cultivation practices of sugarcane by progressive and non progressive farmers and their various personal, socio-economic variables to find out the strength of relationship between the selected independent variables of sugarcane growers with their adoption level of improved cultivation practices in sugarcane.

The results of correlation analysis presented in table 2. indicated that out of nine characteristics studied four characteristics namely education and annual income exhibited positive and highly significant relationship with adoption of improved sugarcane cultivation practices at 1.00 per cent level, while, extent contact and mass media participation exhibited positive and significant relationship with adoption of improved sugarcane cultivation practices among progressive sugarcane growers. Whereas, only mass media participation among non progressive farmers exhibited positive and significant relationship with adoption of improved cultivation practices of sugarcane. Further, the remaining characteristics such as age, land holding, area under sugarcane, experience in sugarcane cultivation and training participation in case of progressive farmers and all variables except mass media participation in case of non progressive farmers did not show significant relationship with adoption of improved sugarcane cultivation practices.

Constraints faced by sugarcane farmers
It was evident from the table 3. that 'delayed in payment' was the most important constraints faced by both progressive (81.67%) and non progressive farmers (86.66%) followed by delay in harvesting faced by 80.00 per cent of progressive and 88.33 per cent of non progressive farmers, and lack of knowledge about insects and pests faced 51.66 per cent and 81.67 per cent of non progressive farmers. While, 58.33 per cent of progressive and 63.33 per cent of non progressive farmers faced lack timely supply of electricity for irrigation pump sets, 51.66 per cent of progressive and 81.67 per cent of non progressive farmers had insufficient knowledge about control of insects and pest. Further, 36.67 per cent of progressive and 68.33 per cent of non progressive farmers had difficulty in obtaining timely loan.

Table 1: Distribution of progressive and non progressive sugarcane growers according to overall adoption of improved cultivation practices of sugarcane

Category	Progressive farmers (n=60)		Non progressive farmers (n=60)	
	F	%	F	%
Low	12	20.00	36	60.00
Medium	15	25.00	13	21.67
High	33	55.00	11	18.33
Mean =97.12 SD=6.99				

Table 2: Relationship between adoption of improved cultivation practices and socio-economic characteristics of sugarcane growers

SI. No	Variables	Correlation co-efficient	
		Progressive farmers (n=60)	Non progressive farmers (n=60)
1	Age	-0.*143*	-0.072
2	Education	0.334**	-0.072
3	Land holding	-0.090	0.095
4	Area under sugarcane	-0.127	-0.364**
5	Experience in sugarcane cultivation	-0.103	-0.051
6	Annual income	0.342**	-0.088
7	Training participation	-0.033	-0.061
8	Extension contact	0.283*	-0.011
9	Mass media participation	0.321*	0.394*

* Significant at 0.05 level
** Significant at 0.01 level

Table 3: Constraints faced by farmers in sugarcane production

SI. No	Constraints	Progressive farmers (n=60)			Non progressive farmers (n=60)		
		F	%	Rank	F	%	Rank
1	Delayed in payment	49	81.67	I	52	86.66	II
2	Delay in harvesting	48	80.00	II	53	88.33	I
3	Lack of knowledge about insects and pest	31	51.66	V	49	81.67	IV
4	Transportation problem	29	48.33	VI	50	83.33	III
5	Difficulty in getting timely loan	22	36.66	VII	41	68.33	V
6	Lack of electricity for pumpset	35	58.33	IV	38	63.33	VII
7	Non-availability of labour	42	70.00	III	39	65.00	VI

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