



Study on Profile Characteristics of *Bt* Cotton Tenant Farmers in Guntur District of Andhra Pradesh

Kantheti Vysali*, P Rambabu¹ and B Mukunda Rao²

Department of Agricultural Extension,

Agricultural College, Orissa University of Agriculture and Technology, Bhubaneswar - 751 003, Odisha, India

¹Director of Extension, ²Professor (Polytechnics), O/o Dean of Agriculture,
ANGRAU, Administrative Office, Lam, Guntur, Andhra Pradesh, India

***Corresponding author:** Ph. D. Scholar, Department of Agricultural Extension, Agricultural College, Orissa University of Agriculture and Technology, Bhubaneswar - 751 003, Odisha

e-mail: vysalikantheti@gmail.com

Contact: +91- 9390395243

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ABSTRACT

The study was conducted in Andhra Pradesh state during 2017-18. A total of 120 *Bt* cotton tenant farmers were selected randomly for the study. An ex-post facto research design was followed. Data was collected with interview schedule followed by personal interview method by selecting the independent variables. The detailed analysis of profile of the *Bt* cotton tenant farmers indicated that majority of the them were middle aged (55.00%), Functionally literate (27.50%), Land taken for lease of about 1.1 to 2.0 hectares (35.00%), 7 to 9 years of farming in *Bt* cotton (40.84%), 1 to 2 trainings received (50.00%), medium extension contact (52.50%), low social participation (40.00%), low annual income of ₹ 12,307 - 71,691 (60.83%), medium innovativeness (70.83%), medium economic motivation (64.17%), medium mass media exposure (47.50%), medium risk orientation (53.33%), medium market orientation (56.67%).

Key words: *Bt* cotton, Tenant farmers, Profile characteristics

Cotton, the 'White Gold' and 'King of fibres' occupy an enviable place amongst commercial crops. It is an important commercial crop of India and is considered to be an industrial commodity of worldwide importance. It is an important fibre crop of global significance, cultivated in tropical and subtropical regions. *Bt* cotton is genetically engineered cotton, which contains a gene taken from a soil bacterium (*Bacillus thuringiensis*) to produce toxins in the plants. It has promoter genes to create doses of the toxins, which are released in all parts of the plants during the entire span of the crop growth. The use of *Bt* cotton is a positive environmental protection because it makes possible the reduction of the insecticides load on the

environment and reduced usage of such chemicals by farmers.

In Guntur district of Andhra Pradesh, mostly *Bt* cotton is grown. So, the present investigation of tenant farmers was done on *Bt* cotton. Tenant farmers are those who cultivate crops by taking land on lease. Tenant farming is an agricultural production system in which land owners contribute their land and often takes care of operating capital and management, while tenant farmers contribute their labour along with at times varying amounts of capital and management. Agreements of lease made between owner and tenant farmers are considered as lease contracts. Depending on the contract, tenants can make payments to the owner

either of a fixed portion of the product, cash or in a combination.

To achieve the highest level of production and productivity, the inadequate level of knowledge on the recommended technology as well as its non-adoption may be a big hindrance which also hampers the production potential of the cotton crops. The gap always appears between the recommended technologies and their use in the farmers field. Hence, there is a need to help tenant farmers to realise the importance of profile characteristics so that recommendations are done accordingly to achieve the objective of overcoming the gap between the potential yield and actual yield. With this background, the present study has been taken to know the profile characteristics of tenant farmers in *Bt* cotton.

MATERIALS AND METHODS

An ex-post-facto research design was followed to achieve the objectives of the study as the variables already occurred. According to Kerlinger (1983), the ex-post-facto research design is a systematical empirical enquiry in which the scientist does not have any direct control of independent variables and was not manipulable. The state of Andhra Pradesh was selected to get well acquainted with the regional language which would help to build a good rapport and also facilitates in depth study through personal observation. Guntur district was selected as it has the highest area under cotton cultivation. Out of 57 mandals in Guntur district, three mandals were selected randomly after listing out the total number of mandals where tenant farmers were more in the cotton growing area. Three mandals, namely Prathipadu, Veldurthi, Karemputi were selected. After listing out the number of villages in each selected mandals, four villages were selected from each selected mandal randomly where tenant farmers were more with the cotton growing area. Ten *Bt* cotton tenant farmers were selected from each village by simple random sampling procedure. Thus, making a total of 120 farmers. The data from the respondent farmers were collected with the help of schedules and interviews. The data collected was analyzed and suitable interpretations were drawn. The statistical techniques like mean, standard deviation, class interval, frequency, percentage were used to analyze the data. Accordingly the respondents were classified into various groups. Profile characteristics namely age, education, land taken for lease, farming experience, training received, extension contact, social participation, annual income, innovativeness, economic motivation, mass media exposure, risk orientation, market orientation were studied regarding tenant farmers of *Bt* cotton production technology.

RESULTS AND DISCUSSION

Age

It is evident from the (Table 1) that little more than half of the *Bt* cotton tenant farmers (55.00%) belonged to middle age, followed by the young age (25.00%) and old age (20.00%) categories. A critical observation of the above findings indicated that a considerable percentage of the *Bt*

cotton tenant farmers were middle aged, followed by young age. The above trend might be due to the fact that middle and young aged *Bt* cotton tenant farmers were enthusiastic, active in performing agricultural practices, possess more physical strength and have more work efficiency than older farmers. The above finding was in agreement with the findings of Prashanth (2011), Karthik (2014).

Education

From table it was evident that the majority (27.50%) of the *Bt* cotton tenant farmers were belonged to functionally literate, followed by primary school (24.17%), illiterate (22.50%), high school (13.33%), graduation and above (6.67%) and Intermediate (5.83%). Thus, it could be inferred that a greater proportion of the *Bt* cotton tenant farmers were functionally literate followed by primary school. The might be due to the fact that tenant farmers had a poor economic background, lack of encouragement from their family members in education and the need for more investment prevented them from higher education. 22.50 per cent of the *Bt* cotton tenant farmers were illiterate. This result was a new finding away from the results of earlier findings.

Land taken for lease

A glance at the table revealed that little more than one third (35.00%) of the *Bt* cotton tenant farmers leased 1.1 to 2.0 hectares of land, followed by up to 1.0 hectares (28.33%), 2.1 to 3.0 hectares (23.33%), 3.1 to 4.0 hectares (7.50%) and above 4.0 hectares (5.84%). From the findings, it is clear that 63.33 per cent of the *Bt* cotton tenant farmers leased up to 2.0 hectares of land. The probable reason might be most of the tenant farmers were not ready to take greater risks to do cultivation on large farms which require more investment and hence tenant farmers tried tenant farming on small farms. These findings was in agreement with the findings of Kiranmayi (2013).

Farming experience in *Bt* cotton cultivation

An overview of the table indicated that the majority (40.84%) of the *Bt* cotton tenant farmers had 7-9 years of farming experience in *Bt* cotton cultivation, followed by 10-12 years (33.33%), 4-6 years (17.50%), 1-3 years (8.33%) of farming experience in *Bt* cotton cultivation. It could be concluded that the majority of the *Bt* cotton tenant farmers had 7-9 years of farming experience followed by 10-12 years. It might be due to the shifting of the farmers from cotton cultivation to *Bt* cotton cultivation from 2002 onwards, which requires less investment than non-*Bt* because of less incidence of pests and diseases in *Bt* cotton. The finding was in conformity with Gangadhar (2009).

Training received

The results from table indicated that 16.67 per cent of the *Bt* cotton tenant farmers were untrained. They had not received training. Half of the *Bt* cotton tenant farmers (50.00%) had gone through 1 to 2 trainings, followed by 3 to 4 trainings (25.00%) and above five trainings (8.33%). The *Bt* cotton tenant farmers who were in contact with the extension personnel have attended training programmes

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conducted by the agricultural department officials about *Bt* cotton production technologies. 16.67 per cent of the *Bt* cotton tenant farmers had not attended any trainings, because the trainings were not conducted at the convenient

time of the farmers and some were not aware of the training programmes. So, there is a need to inculcate the spirit of attending the training programmes in the farmers. The above finding was in conformity with the findings of Divya (2017).

Table 1 Profile characteristics of tenant farmers in *Bt* cotton cultivation at a glance

Independent variables	Category	Respondents (n=120)	
		Frequency	Percentage
Age	Young age (<35 years)	30	25.00
	Middle age (35-58 years)	66	55.00
	Old age (>58 years)	24	20.00
Education	Illiterate	27	22.50
	Functionally literate	33	27.50
	Primary school – (1 to 5 th class)	29	24.17
	High school – (6 th to 10 th)	16	13.33
	Intermediate	7	5.83
	Graduation and above	8	6.67
Land taken for lease	Up to 1.0 ha	34	28.33
	1.1-2.0 ha	42	35.00
	2.1-3.0 ha	28	23.33
	3.1-4.0 ha	9	7.50
	Above 4.0 ha	7	5.84
Farming experience	1-3 years	10	8.33
	4-6 years	21	17.50
	7-9 years	49	40.84
	10-12 years	40	33.33
Training received	Untrained	20	16.67
	1-2 trainings	60	50.00
	3-4 trainings	30	25.00
	Above 5 trainings	10	8.33
Extension contact	Low (<20.24)	30	25.00
	Medium (20.24-26.18)	63	52.50
	High (>26.18)	27	22.50
Social participation	Low (<7.07)	48	40.00
	Medium (7.07-10.59)	40	33.33
	High (>10.59)	32	26.67
Annual income	Low (₹ 12, 307-71, 691)	73	60.83
	Medium (₹ 71, 692-1, 31,076)	38	31.67
	High (₹ 1, 31, 077-1, 90, 462)	9	7.50
Innovativeness	Low (<20.46)	20	16.67
	Medium (20.46-32.22)	85	70.83
	High (>32.22)	15	12.50
Economic motivation	Low (<17.06)	30	25.00
	Medium (17.06-23.20)	77	64.17
	High (>23.20)	13	10.83
Mass media exposure	Low (<16.22)	34	28.33
	Medium (16.22-22.88)	57	47.50
	High (>22.88)	29	24.17
Risk orientation	Low (<15.43)	23	19.17
	Medium (15.43-23.33)	64	53.33
	High (>23.33)	33	27.50
Market orientation	Low (<10.67)	21	17.50
	Medium (10.67-14.35)	68	56.67
	High (>14.35)	31	25.83

Extension contact

It is clear from the table that little more than half of the *Bt* cotton tenant farmers (52.50%) had medium extension

contact, followed by low (25.00%) and high (22.50%) extension contact. The majority of the *Bt* cotton tenant farmers had the medium level of extension contact because

of their interest and eagerness in solving the field problems in consultation with agricultural experts. Whereas, one-fourth of the *Bt* cotton tenant farmers had low extension contact. The possible reason attributed might be inadequate extension staff and they contact friends for information. Therefore, there is a need to strengthen extension organizations. This finding was in line with the findings of Rao (2011).

Social participation

Table revealed that the majority (40.00%) of the *Bt* cotton tenant farmers had low social participation, followed by medium (33.33%) and high (26.67%) social participation. The plausible reason for the majority of the *Bt* cotton tenant farmers having low social participation is that tenant farmer being resource poor hardly get a chance to participate in social organizations. Illiteracy and lack of awareness about the advantages of becoming a member, non-attracting activities undertaken by the organizations and local politics might also be the cause for the low social participation of the *Bt* cotton tenant farmers. The above finding was in conformity with the findings of Sable and Kadam (2013).

Annual income

An overview of the table indicated that the majority (60.80%) of the *Bt* cotton tenant farmers had low annual income from ₹ 12, 307-71, 691, followed by the medium annual income of ₹ 71, 692-1, 31, 076 (31.67%) and high annual income of ₹ 1, 31, 077-1, 90, 462 (7.50%). The majority of the farmers had low annual income from ₹ 12, 307-71, 691 because most of the income they obtained would go for repayment of credit borrowed from private money lenders at higher interest rates for pesticides, fertilizers, seeds and high leased land rents of ₹ 13, 000 to 18, 000. Only a few farmers had an annual income more than ₹ 1, 31, 077 because they had taken more land under lease. The above finding was in conformity with the findings of Pruthvi (2011), Kiranmayi (2013).

Innovativeness

It is evident from the table that majority (70.83%) of the *Bt* cotton tenant farmers had medium innovativeness, followed by low (16.67%) and high (12.50%) level of innovativeness. The probable reasons for the above trend might be due to the fact that majority of the *Bt* cotton tenant farmers had medium extension contact and mass media exposure so that they can update their knowledge and skills from time to time and were ready to accept the new technologies which helped them to develop better level of innovativeness regarding *Bt* cotton cultivation whereas, the farmers having low risk taking ability were not ready to adopt new technologies and thereby having low level of innovativeness. These findings were in agreement with the findings of Prasad (2016).

Economic motivation

A glance at the table indicated that the majority (64.17%) of the *Bt* cotton tenant farmers had the medium

economic motivation, followed by low (25.00%) and high (10.83%) level of economic motivation. It was clear that the majority of the *Bt* cotton tenant farmers had medium economic motivation because most of them were profit motive and they have strong desire to increase their productivity thereby improving their standards economically. These findings were in agreement with the findings of Veeraiah et al. (2005).

Mass media exposure

The perusal of the table revealed that nearly half (47.50%) of the *Bt* cotton tenant farmers had medium mass media exposure, followed by low (28.33%) and high (24.17%) level of mass media exposure. The possible reason for the majority of the *Bt* cotton tenant farmers having medium mass media exposure is that the majority of them were middle and young aged and had a better inclination towards the utilization of different mass media such as Television and newspapers. 28.33 per cent of the *Bt* cotton tenant farmers had low mass media exposure. The possible reason for this trend is due to illiteracy, lack of awareness of farmers regarding broadcasting timings, busy with other activities and lack of interest to know about new technologies. This finding was in agreement with the findings of Kiranmayi (2013).

Risk orientation

The findings embellished in the table revealed that little more than half of the *Bt* cotton tenant farmers (53.33%) had medium risk orientation, followed by high (27.50%) and low (19.17%) level of risk orientation. The plausible reason for the majority of the *Bt* cotton tenant farmers with medium risk orientation is that they have to pay the leased rent to the owner farmers in spite of profits or losses and were ready to take the risk for obtaining good returns. This finding was in agreement with the findings of Prathyusha (2014).

Market orientation

The results presented in the table indicated that more than half of the *Bt* cotton tenant farmers (56.67%) had medium market orientation followed by high (25.83%) and low (17.50%) level of market orientation. The possible reason for the majority of the *Bt* cotton tenant farmers having medium market orientation is that they were exclusively dependent on farm yields and profits obtained by selling their produce and they were habituated to sell their produce to middlemen to meet their expenses or for repaying their debts. The above finding was in conformity with the findings of Gangadhar (2009).

The analysis of profile characteristics of *Bt* cotton tenant farmers indicated that majority of them were middle aged, functionally literate, land taken for lease of about 1.1 to 2.0 hectares, 7 to 9 years of farming in *Bt* cotton, 1 to 2 trainings received, medium extension contact, low social participation, low annual income, medium innovativeness, medium economic motivation, medium mass media exposure, medium risk orientation, medium market orientation.

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