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Study on adaptation of improved cultivation practices of cotton on socio-economic status of cotton grower in Northern Rajasthan

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Abstract

The study was conducted in 2022-2024 crop seasons the investigator is studying in S.K.D. University, Hanumangarh district of Northern Rajasthan. So were done collect the required information by the interview scheduled. The selection of villages was selected randomly from each block, ten villages were selected randomly from each blocks. Thus, the total 20 villages selected for the study purpose. Than the two blocks was selected randomly for the study purpose namely Bhadra and Hanumangarh Blocks of Hanumangarh district Northern Zone of Rajasthan. Selection of the respondents purposively was done by simple random sampling method from every village 10 cotton grower farmers were selected randomly for study so as to constitute a total sample size of 200 respondents. The respondents were contacted personally for data collection. The results of the study depicted that the maximum number of the respondents were found in various socio-economic profile characters like, (48.00%) and (60%) were observed in the categories of middle (35 to 59 years) age of the hybrid cotton and HYV cotton growers, primary school (31.00%) and (28.00%), OBC caste (50.00%) and (58.00%), Nuclear family (67.00%) and (71.00%), Marginal farmers (87.00%) and (90.00%), Rs. 55,000 to 1, 10,000 Annual income (43.00%) and (35.00%), Pucca house (88.00%) and (86.00%), Above 30 years (49.00%) and (36.00%) Farming experience, Non-member (67.00%) and (75.00%) Social participation, and (68.00%) and (56.00%) Tube-well + canal, respectively.

Keywords: Socio-economic condition, adaptation, innovations, awareness, techniques, etc.

Introduction

Cotton (*Gossypium hirsutum* L.) is one of the important crops grown in India, USA, China and Pakistan, contributing 85 per cent to the total global cotton production. In India, cotton is grown on 9.2 million hectare area, constituting 27 per cent of worlds' cotton area with the highest production in the world. Indeed, the social security and rural livelihood of vast majority of people are greatly dependent upon cotton crop through its production, picking, transportation, trade, processing and marketing etc. Therefore, it is important to increase the production and productivity of cotton, especially in traditionally cotton growing areas of arid and semi-arid regions. Although after the introduction of Bt-cotton in India, the production levels were significantly increased and country became the leader amongst the top cotton producers but still productivity remained low compared with other cotton growing countries. Among different yield governing factors, the attack of bollworms and sucking pests decreased in Bt-cotton production resulting increase in productivity, but the infestation of sucking pests increased after 2006- 07, which has caused indiscriminate use of pesticides. Cotton is one of

the most important fiber and a cash crop of India and plays a dominant role in the industrial and agricultural economy of the country. Globally, the area under cotton for the year 2021-22 was 32.10 million hectares, production and productivity accounted for 257.71 million bales and 1370 kg/ha respectively. India has emerged as the largest producer of cotton in the world and occupies the first position in terms of both total area and production. Among the major cotton producing countries in the world, India occupied 1st position with 68.71 million bales. In India during 2021-22, production of cotton was 362.19 lakh bales (1st Advance estimates, eands.dacnet.nic.in) cultivated under an area of 119.66 lakh hectares with a productivity of 515 kg per hectare. According to the 2nd advance estimates of 2021-22, cotton production in Andhra Pradesh was 16.25 lakh bales cultivated under an area of 5.23 lakh hectares with a productivity of 528 kg per hectare (des.ap.gov.in) contributing 4.49 per cent to total country's production. In India, there are nine major cotton growing states which fall under three zones, viz. the North Zone (Punjab, Haryana and Rajasthan), the Central Zone (Maharashtra, Madhya Pradesh and Gujarat), and the Southern Zone (Andhra Pradesh,

Karnataka and Tamil Nadu). Nearly 65 per cent of the cotton crop is cultivated under rainfed conditions in the country. Nearly 2/3rd of the Cotton production in India comes from the states of Maharashtra, Gujarat, Andhra Pradesh, and Telangana, collectively known as the Cotton Basket of India.

Material and Methods

The study was conducted in year 2022 to 2024 since the investigator is studying in S.K.D. University, Hanumangarh district of Northern Rajasthan. So were done collect the required information by the interview scheduled. The selection of villages was selected randomly from each block, ten villages were selected randomly from each blocks. Thus, the total 20 villages selected for the study purpose. Than the two blocks was selected randomly for the study purpose namely Bhadra and Hanumangarh Blocks of Hanumangarh district Northern Zone of Rajasthan. Selection of the respondents purposively was done by simple random sampling method from every village 10 cotton grower farmers were selected randomly for study so as to constitute a total sample size of 200 respondents. The respondents were contacted personally for data collection. Data were collected with the help of semi-structured interview schedule specially developed on standard scales with some modifications in the light of objectives and analyzed with suitable statistical methods.

Result and Discussion

Table 1: Distribution of respondents according to age

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Young (below 35 years)	14(14.00%)	17(17.00%)
Middle (35 to 59 years)	48(48.00%)	60(60.00%)
Old (above 59 years)	38(38.00%)	23(23.00%)
Total	100%	100%

Mean= 39.91, S.D= 13.664, Min.= 20, Max.= 67

Table 1 that the maximum number respondents (48.00%) and (60%) were observed in the categories of middle (35 to 59 years) age of the hybrid cotton and HYV cotton growers followed by above 59 old age (38.00% & 23.00%) and young below 35 years (14.00% & 17.00%), respectively.

Table 2: Distribution of respondents according to education

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Illiterate	09(09.00%)	15(15.00%)
Can read and write only	04(04.00%)	04(04.00%)
Primary school	31(31.00%)	28(28.00%)
High school	24(24.00%)	23(23.00%)
Intermediate	08(08.00%)	09(09.00%)
Graduation & above	23(23.00%)	21(21.00%)
Total	100(100%)	100(100%)

Mean= 2.00, S.D= 1.765, Min.= 0.000, Max.= 6.00

Table 2 that the maximum number respondents (31.00%) and (28.00%) were observed in the categories of primary school the hybrid cotton and HYV cotton growers followed by high school (24.00% & 23.00%), Graduation & above (23.00% & 21.00%), Illiterate (9.00% & 15.00%), Intermediate (8.00% & 9.00%), and Can read and write only (4.0% & 4.0%), respectively.

Table 3: Distribution of respondents according to caste.

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
General caste	31(31.00%)	28(28.00%)
Other Backward caste	50(50.00%)	58(58.00%)
Scheduled caste	19(19.00%)	14(14.00%)
Total	100(100%)	100(100%)

Mean= 1.720, S.D= 0.674, Min.= 1.000, Max.= 3.000

Table 3 that the maximum number respondents (50.00%) and (58.00%) were observed in the categories of OBC in hybrid cotton and HYV cotton growers followed by General caste (31.00% & 28.00%) and S.C (19.00% & 14.00%), respectively.

Table 4: Distribution of respondents according to type of family.

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Nuclear family	67 (67.00%)	71 (71.00%)
Joint family	33 (33.00%)	29 (29.00%)
Total	100 (100.00%)	100 (100.00%)

Mean= 1.075, S.D= 0.264, Min.= 1.000, Max.= 2.00

Table 4 that the maximum number respondents (67.00%) and (71.00%) were observed in the categories of Nuclear family in hybrid cotton and HYV cotton growers followed by Joint family (33.00% & 29.00%), respectively.

Table 5: Distribution of respondents according to size of land holding

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Marginal (<1 ha)	87 (87.00%)	90 (90.00%)
Small (1-2 ha)	10 (10.00%)	08 (08.00%)
Semi-medium (2-4 ha)	03 (03.00%)	02 (02.00%)
Medium (4-10 ha)	04 (04.00%)	03 (03.00%)
Large (>10 ha)	00 (00.00%)	00 (00.00%)

Mean= 3.034, S.D= 0.751, Min.= 2.500, Max.= 4.440

Table 5 that the maximum number respondents (87.00%) and (90.00%) were observed in the categories of Marginal (<1 ha) farmer in hybrid cotton and HYV cotton growers followed by Small (1-2 ha) farmer (10.00% & 08.00%), Semi-medium (2-4 ha) farmer (03.00% & 02.00%), Medium (4-10 ha) farmer (04.00% & 03.00%) and Large (>10 ha) farmer (0.00% & 0.00%) respectively.

Table 6: Distribution of respondents on the basis of annual income

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Upto Rs. 55,000	28 (28.00%)	53 (53.00%)
Rs. 55,000 to 1,10,000	43 (43.00%)	35 (35.00%)
Above Rs. 1,10,000	29 (29.00%)	12 (12.00%)
Total	100 (100.00%)	100 (100.00%)

Mean= 74530.00, S.D= 33793, Min.= 36000.00, Max.= 175000

Table 6 that the maximum number respondents (43.00%) and (35.00%) were observed in the categories of Rs. 55,000 to 1, 10,000 in the hybrid cotton and HYV cotton followed by Above Rs. 1,10,000 (29.00% & 12.00%), and Upto Rs. 55,000 (28.00% & 53.00%), respectively.

Table 7: Distribution of respondents according to house possession

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Pucca House	88 (88.00%)	86 (86.00%)
Kachcha house	12 (12.00%)	14 (14.00%)

Note: More than one items have been shown by respondent, hence the total percentage of all items would be more than 200.

Table 7 that the maximum number respondents (88.00%) and (86.00%) were observed in the categories of Pucca House by kachcha house (12.00% & 14.00%) were having in case of hybrid Cotton and HYV Cotton growers, respectively.

Table 8: Distribution of respondents according to farming experience

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Below 10 years	12 (12.00%)	16 (16.00%)
11-20 years	22 (22.00%)	27 (36.00%)
21-30 years	15 (15.00%)	21 (21.00%)
Above 30 years	49 (49.00%)	36 (36.00%)
Total	100(100.00%)	100(100.00%)

Note: More than one items have been shown by respondent, hence the total percentage of all items would be more than 200.

Table 8 that the maximum number respondents (49.00%) and (36.00%) were observed in the categories of Above 30 years in hybrid cotton and HYV cotton followed by 11-20 years (22.00% & 27.00%), 21-30 years (15.00% & 21.00%) and Below 10 years (12.00% & 16.00%), respectively.

Table 9: Distribution of respondents according to social participation

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Non-member	67 (67.00%)	75 (75.00%)
Member	22 (22.00%)	17 (17.00%)
Office Bearer	11 (11.00%)	8 (8.00%)

Mean= 0.125, S.D= 0.490, Min.= 0, Max.= 03

Table 9 the maximum number respondents (67.00%) and (75.00%) were observed in the categories of Non-member in hybrid cotton and HYV cotton followed by Member (22.00% & 17.00%) and Office Bearer (11.00% & 8.00%), respectively.

Table 10: Sources of irrigation utilized by the respondents

N=200

Categories	Number of respondents and their percentage	
	Hybrid Cotton	HYV Cotton
Tube well	25 (25.00%)	18 (18.00%)
Pump set	21 (21.00%)	14 (14.00%)
Tube-well + pump set	16 (16.00%)	12 (12.00%)
Tube-well + canal	68 (68.00%)	56 (56.00%)
Pump set + canal	22 (22.00%)	19 (19.00%)
Canal	31 (31.00%)	27 (27.00%)
Total	100 (100%)	100 (100%)

Note: More than one items have been shown by respondent, hence the total percentage of all items would be more than 200.

Table 10 the maximum number of respondents (68.00%) and (56.00%) were observed in the categories of Tube-well + canal in hybrid cotton and HYV cotton growers followed by Canal (31.00% & 27.00%), Tube well (25.00% & 18.00%), Pump set + canal (22.00% & 19.00%), Pump set (21.00% & 14.00%) and Tube-well + pump set (16.00% & 12.00%) respectively.

Conclusion

So, it is conclude knowledge about different variable the maximum number of respondents were found in the categories of the maximum number respondents (48.00%) and (60%) were observed in the categories of middle (35 to 59 years) age of the hybrid cotton and HYV cotton growers, primary school (31.00%) and (28.00%), OBC caste (50.00%) and (58.00%), Nuclear family (67.00%) and (71.00%), Marginal farmers (87.00%) and (90.00%), Rs. 55,000 to 1, 10,000 Annual income (43.00%) and (35.00%), Pucca house (88.00%) and (86.00%), Above 30 years (49.00%) and (36.00%) Farming experience, Non-member (67.00%) and (75.00%) Social participation, and (68.00%) and (56.00%) Tube-well + canal, respectively.

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