

ADOPTION OF HYBRID CASTOR CULTIVATION TECHNOLOGY BY THE CASTOR GROWERS

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ABSTRACT

The average yield of Banaskantha district is low as compared to the yield potentiality of Research Station. Therefore, the study was purposively conducted in Banaskantha district of Gujarat State as the district ranks first as far as the area and production under hybrid castor is concerned. The independent variables viz., education, social participation, scientific orientation, risk preference, economic motivation, innovativeness, extension contact, size of land holding, irrigation facility and annual income were positively and significantly related with extent of adoption of hybrid castor cultivation technology by the farmers. The knowledge level was found positively and significantly correlated with extent of adoption of hybrid castor cultivation technology by the respondents.

INTRODUCTION

Castor is an important industrial non-edible oilseed crop. It is grown under varied conditions of climate including tropical, sub-tropical and temperate. India ranks first in respect of area (7.1 lakh ha.), production (8.5 lakh tonnes) and productivity (1197 kg/ha.) in the world. Gujarat state ranks first position in the country with respect to area (458800 ha.), production (638800 mt.) and productivity (1972 kg/ha.) among all major castor growing states in the country. However, the average yield of Banaskantha district is low (1291 kg/ha) as compared to the yield potentiality of Research Station (3000 kg/ha.). The present study "adoption of hybrid castor cultivation technology by the castor growers in Banaskantha district of Gujarat state" was therefore planned.

METHODOLOGY

The present study was conducted in Banaskantha district of Gujarat State as the district ranks first as far as the area and production under hybrid castor is concerned. Dhanera and Tharad talukas were selected purposively. Ten villages having highest area under hybrid castor cultivation were selected

purposively from each taluka. Using proportionate random sampling technique hybrid castor growers were selected from each village making a sample of 200 respondents. The selected independent variables were measured by using suitable scales and procedure developed by various researchers in past with necessary modifications. For the measurement of knowledge and extent of adoption of hybrid castor cultivation technology, the teacher made test was developed. Adoption quotient formula developed by Sengupta (1967) was used to find out extent of adoption of hybrid castor cultivation technology. The data were collected with the help of structured and pre-tested interview schedule. The data collected were then analyzed in the light of objectives for arriving at meaningful interpretation.

RESULTS AND DISCUSSION

To assess the knowledge level of hybrid castor growers about the recommended cultivation technology, a battery of 18 items was prepared. A score of one was assigned to correct answer and 'Zero' for incorrect answer. The total knowledge score actually possessed by the farmers was

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ranging from 8.5 to 18.0. On the basis of score obtained, the respondents were categorized into three categories. Table 1 indicates the results in this regard.

Table 1: Distribution of the respondents according to their level of knowledge n=200

Sr. No.	Knowledge level	Number	Per cent
1	Low (below 10 score)	38	19.00
2	Medium (10 to 15 score)	126	63.00
3	High (above 15 score)	36	18.00

The results in the Table 2 postulate that clear majority of respondents (63.00 %) had medium level of knowledge, followed by 19.00 per cent with low and 18.00 per cent with high level of knowledge regarding recommended hybrid castor cultivation technology. The majority of the farmers were having medium knowledge might be due to their interaction with the personnel of State Agricultural University/Department of Agriculture/

Research Centers/Krishi Vigyan Kendra.

Similar findings were reported by Chothani (1999) and Patil *et al* (1999).

Practice wise adoption of recommended hybrid castor cultivation technology was ascertained in the respect of important recommended practices and data thus obtained have been reported in Table 2.

Table 2: Practice wise adoption of recommended hybrid castor practices by castor growers n=200

Sr. No	Practices	Adoption		
		Frequency	Per cent	Rank
1	Improved variety	176	88	V
2	Seed rate	84	42	XI
3	Time of sowing	164	82	VI
4	Seed treatment	18	9	XIII
5	Spacing	86	43	X
6	Farm yard manure	88	44	IX
7	Chemical fertilizer	116	58	VIII
8	Irrigation applied	188	94	II
9	Intercropping	16	8	XIV
10	Interculturing	180	90	III
11	Weeding	154	77	VII
12	Pest control measures	36	18	XII
13	Diseases control measures	12	6	XV
14	Picking and Harvesting	178	89	IV
15	Spreading for drying	164	82	VI
16	Threshing	190	95	I

The data presented in Table 2 reveal that the overwhelming majority of farmers had adopted the practices viz., threshing (95 %), irrigation application (94 %), interculturing (90 %), picking and harvesting (89 %), improved variety (88 %), sowing time and spreading for drying capsules

(82 %) and weeding (77 %) and ranked I, II, III, IV, V, VI and VII, respectively. Whereas, majority of the farmers had adopted chemical fertilizers (58 %) and ranked VIII. While, little less than majority farmers adopted the practices like farm yard manure (44%), spacing (43 %) and seed rate (42 %) and raked IX,

X and XI, respectively. Further, the recommended practices in respect of pest control measure (18 %), seed treatment (9 %), intercropping (8 %) and diseases control measure (6 %) were adopted by very negligible respondents and ranked XII, XIII, XIV and XV.

From the above discussion, it can be concluded that threshing, irrigation application, variety,

interculturating, sowing time, spreading for drying capsules and weeding practices were the practices adopted by great majority of the farmers. While the practices viz., seed treatment, plant protection measures and intercropping were found adopted by negligible farmers. Based on the overall adoption, respondents were categorized into three groups and data have been reported in Table 3.

Table 3: Distribution of the respondents according to their level of adoption

n=200

Sr. No.	Extent of adoption	Number	Per cent
1	Low (Up to 9 score)	26	13.00
2	Medium (9.1 to 13 score)	146	73.00
3	High (above 13 score)	281	4.00

The result presented in Table 3 clearly indicate that majority (73.00 %) of the respondents were having medium level of adoption. On the other hand, 14.00 per cent of respondents falls under the category of high level of adoption. While, 13.00 per cent respondents were found having low level of adoption of recommended castor cultivation technology.

Similar findings were reported by Gouda (1995) and Chothani (1999).

The independent variables viz., education, social participation, scientific orientation, risk preference, economic motivation, innovativeness, extension contact, size of land holding, irrigation facility and annual income were positively and significantly related with extent of adoption of hybrid castor cultivation technology by the farmers at 0.01 level of significance. While, the age had negative and significant relationship with the adoption of hybrid castor cultivation technology.

Table 4: Relationship with selected characteristics of hybrid castor growers, and their extent of adoption of recommended hybrid castor cultivation technology

n=200

Sr. No.	Variables	Coefficient of correlation (<i>r'</i> value)
1	Age	-0.21499**
2	Education	0.53866**
3	Social participation	0.34840**
4	Land holding	0.13926*
5	Irrigation facility	0.17588**
6	Annual income	0.18196**
7	Scientific orientation	0.56250**
8	Risk preference	0.48763**
9	Economic motivation	0.15085*
10	Innovativeness	0.63231**
11	Extension contact	0.64369**

NS: Non Significant

* : Significant at 0.05 per cent level of the probability

** : Significant at 0.01 per cent level of the probability

The result regarding relationship between knowledge level and extent of adoption of hybrid castor cultivation technology by the respondents are depicted in Table 5.

Table 5: Relationship between knowledge level of the respondents about Hybrid castor cultivation technology and their extent of adoption

Character of the respondents	Correlation coefficient 'r' value
Knowledge level	0.9300**

**Significant at 0.01 per cent level of the probability.

The calculated 'r' value (0.9300) was positive and significant at 0.01 level of significance indicating that the knowledge level of hybrid castor growers regarding hybrid castor production technology had positive and significant relationship with their adoption. This indicates that Knowledge of hybrid castor production technology was found important factor in increasing adoption of hybrid castor production technology.

Farmers with better knowledge regarding hybrid castor production technology are likely to have high interest to utilize the same for generating income which leads them towards high adoption of hybrid castor production technology. This might be the probable reason for significant correlation between their knowledge regarding hybrid castor production technology and adoption.

This finding is in collaboration with that of Dangar (1996), Deshmukh *et al.* (1998) and Kawale (2000).

CONCLUSIONS

Majority of respondents were having medium level of knowledge and adoption of hybrid castor cultivation technology. The independent variables viz., education, social participation, scientific orientation, risk preference, economic motivation, innovativeness, extension contact, size of land holding, irrigation facility and annual income were

positively and significantly related with extent of adoption of hybrid castor cultivation technology by the farmers. The knowledge level was found positively and significantly correlated with extent of adoption of hybrid castor cultivation technology by the respondents.

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