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Research Article

Characteristic and adoption behaviour of mango growers in Valsad district of Gujarat

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SUMMARY : In research study conducted on adoption behaviour of mango growers of valsad district of Gujarat state with the major objectives of measuring the personal, socio-economic and situational, extension communication and psychological characteristics of mango growers and their adoption behaviour. It was observed that the more than half (52.00 per cent) of the respondents were in middle age group, having (58.00 per cent) primary to secondary level of education and medium size of land holding (61.00 per cent). Near half of the (47.00 per cent) of the respondents possessed more than 75.00 per cent of land under mango cultivation, small size of family (76.00 per cent), having medium level of income (58.00 per cent) and medium level of cropping intensity(68.00 per cent). More than four fifth (82.00 per cent) of the respondents had medium social participation, near to three fourth (72.00 per cent) had medium level of awareness regarding value addition, 76.00 per cent of them had medium mango yield index, more than half (53.00 per cent and 54.00 per cent) of the mango growers had medium extension participation and medium level of mass media exposure, respectively, 67.00 per cent had medium level of extent of adoption, 65.00 per cent were found in medium category of management orientation. More than half (54.00 per cent) of mango growers fell in best level of innovativeness, 84.00 per cent of them were in average level of progressiveness and 74.00 per cent of them had average level of knowledge regarding mango cultivation. In case of the practice wise adoption of improved mango production technology, the practice, *viz.,* variety, planting distance, integrated disease management and integrated insects pests management were highly adopted by the mango growers.

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BACKGROUND AND OBJECTIVES

Mango is one of the choicest and ancient fruits known to mankind. Being a useful and delicious fruits it is called as the king of the fruits. The five fruits (mango, banana, citrus, guava and apple) alone cover about 75 per cent of total fruits production of the country. However, mango alone contributed about 40 per cent of total fruits production in country (Verma and Munshi, 2003).

In Gujarat area under mango has increased continuously and in the same period the production has also increased. Mango is nutritionally superior and capable of producing higher yield and good return. It is considered as the most potential fruit crop based on export volume and value. Gujarat has an established export market and poses bright opportunities for export in the international market whether in fresh or processed form. Similarly, mango industry has provided livelihood opportunities to its growers and those involved in its marketing channel. Over half of the world mango is produced by India, while its export share in the world market is meager only 5.3 per cent. Hence, there is a good opportunity for the mango growers and those who are involved in marketing and processing business.

In view of these facts, it was highly considered necessary to carry out the study with the following specific objectives: to study the personal, socio-economic and situational, extension communication and psychological profile of mango growers and to assess the extent of adoption of recommended mango production

technologies by the mango growers.

RESOURCES AND METHODS

The investigation was undertaken in Valsad and Pardi Taluka of Valsad district. From these two Talukas, total ten villages were selected purposively on the basis of more number of mango growers in the village. From each village, 10 mango growers were selected. Thus, the sample size of the investigation was one hundred. The farmers doing mango cultivation since last five years were selected randomly. Ex-post facto research design was used for the study and multi-stage random sampling technique was used for the selection of districts, Talukas and villages.

An interview schedule was prepared containing information regarding different variables. The data were collected by personal interview. The data so collected were coded, classified, tabulated and analysed in order to make the findings meaningful. The findings of the study and conclusions are summarized as below.

OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation has been discussed below:

Distribution of the respondents according to their selected characteristic :

Age:

The data presented in Table 1 indicate that 52.00 per cent of the respondents were in the middle age group, while 26.00 per cent were in the young age group. The remaining 22.00 per cent of the respondents were from the old age group. This finding is in conformity with the observation of Chothani (1999).

Education:

The data presented in Table 1 indicate that 16.00 per cent of the respondents possessed Primary level of education, whereas 42.00 and 29.00 per cent of the respondents had secondary and higher secondary level of education, respectively. The Bachelor's degree was possessed by only 12.00 per cent. It was interesting to note that only 1.00 per cent of the respondents were illiterate. Similar findings were reported by Chothani (1999).

Land holding:

As shown in Table 1, 61.00 per cent of the mango growers had a medium size of land holding. Remaining 30.00 per cent and 9.00 had small and big size of land holding, respectively. The finding of Chothani (1999) is in confirmity with the present finding.

Area under mango:

The data pertaining to the area under mango cultivation are given in Table 1, which revealed that near to half of the respondents (45.00 per cent) possessed, more than 75.00 per cent land under mango cultivation, whereas 22.00 per cent had land ranging from 50.00 to 75.00 per cent out of total land

Table 1: Personal variables of mango growers **(n=100)**

Sr. No.	Characteristics	Category	Frequency	Per cent
1.	Age	Young (up to 35 years)	26	26.00
		Middle (36 to 50 years)	52	52.00
		Old (Above 50 years)	22	22.00
2.	Education	Illiterate	1	1.00
		Primary education (up to 7th Std.)	16	16.00
		Secondary education(8thto10th Std.)	42	42.00
		Higher secondary education (11th to 12th Std.)	29	29.00
		College education	12	12.00
3.	Land holding	Small (1 to 2 ha)	30	30.00
		Medium (2 to 10 ha)	61	61.00
		Big (above 10 ha)	9	9.00
4.	Area under mango cultivation	Up to 25 per cent	12	12.00
		25 to 50 per cent	21	21.00
		50 to 75 per cent	22	22.00
		Above 75 per cent	45	45.00
5.	Irrigation facility	Less (up to 2 ha)	28	28.00
		Medium (2 to 10 ha)	66	66.00
		More (above 10 ha)	06	6.00

possession, while only 12.00 per cent and 21.00 per cent of mango growers were fall in the category up to 25.00 per cent and 25.00 to 50.00 per cent of land possession, respectively.

Irrigation facilities:

The data pertaining to the irrigation facility are given in Table 1, which revealed that 66.00 per cent of the mango growers had a medium level of irrigation facility. While 28.00 per cent and 6.00 per cent were in the category of less and more irrigation facilities, respectively. Majority of mango growers either irrigate their plantation by means of bore well or canal water. Similar findings were reported by Jadav (2005).

Socio-economic, situational and extension communication variables:

Family size:

As shown in Table 2, 76.00 per cent of the respondents had small size of family, while 24.00 per cent of respondents were in the category of large size of family. Similar results were reported by Jadav (2005).

Annual income:

From the data presented in Table 2, it is observed that 58.00 per cent of the mango growers had the medium level of income ranging from Rs. 1.00 to 3.00 lacs followed by 27.00 per cent of the respondents had the income up to Rs. 1.00 lac and only 15.00 per cent had income bove Rs. 3.00 lacs. The finding was confirmed by Jadav (2005)

Cropping intensity:

The data presented in Table 2 clearly indicate that 68.00 per cent of the mango growers had medium cropping intensity; whereas 12.00 per cent and 20.00 per cent had low and high level of cropping intensity, respectively. This finding was in confirmity with the findings of Jadav (2005).

Social participation:

The data presented in Table 2 revealed that more than four fifth (82.00 per cent) of the respondents had medium social participation followed by low (8.00 per cent) and high (10.00 per cent) social participation.The similar findings were

Table 2: Socio-economic, situational and extension communication variables **(n=100)**

Sr. No.	Characteristics	Category	Frequency	Per cent
1.	Family size	Small family (up to 5 members)	76	76.00
		Large family (above 5 members)	24	24.00
2.	Annual income (Rs.)	Low (up to 1.00 lac)	27	27.00
		Medium (1.00 to 3.00 lacs)	58	58.00
		High (above 3.00 lacs)	15	15.00
3.	Cropping intensity	Low (up to 1 ha)	12	12.00
		Medium (1 to 4 ha)	68	68.00
		High (above 4 ha)	20	20.00
4.	Social participation	Low (member in one organization)	08	8.00
		Medium (member in more than one organization)	82	82.00
		High (members with office bearer)	10	10.00
5.	Awareness regarding value addition	Low (below 1.70)	06	6.00
		Medium(1.71-2.61)	72	72.00
		High (above 2.61)	22	22.00
6.	Mango yield index	Low (below 90.71)	04	4.00
		Medium (90.72-110.12)	76	76.00
		High (above110.12)	20	20.00
7.	Employment generation	Low (below 100 man days)	05	5.00
		Medium (101 – 150 man days)	81	81.00
		High (above 150 man days)	24	24.00
8.	Extension participation	Low (up to 42.86)	18	18.00
		Medium (42.87-85.71)	53	53.00
		High (above 85.71)	29	29.00
9.	Mass media exposure	Low (up to 9.06)	22	22.00
		Medium (9.07 – 12.78)	54	54.00
		High (above 12.78)	24	24.00

observed by Chothani (1999) and Jadav (2005).

Awareness regarding value addition:

It can be seen from the data presented in Table 2 that near to three fourth (72.00 per cent) of the respondents had medium level of awareness followed by high (22.00 per cent) and low (6.00 per cent) level of awareness regarding value addition.

Mango yield index:

The data presented in Table 2 clearly indicate that 76.00 per cent of the mango growers had medium mango yield index, whereas 20.00 per cent of respondents had high mango yield index and only 4.00 per cent of the respondents had low level mango yield index. Similar findings were reported by Jadav (2005).

Employment generation:

The data presented in Table 2 revealed that majority of mango growers (81.00 per cent) had medium employment generation, whereas 24.00 per cent of respondents had high employment generation and only 5.00 per cent of the respondents had low employment generation.

Extension participation:

The data regarding extension participation are presented in Table 2, which revealed that 53.00 per cent of the mango growers had medium extension participation, whereas 29.00 per cent and 18.00 per cent of them had high and low extension participation, respectively.

Mass media exposure:

From perusal of the data presented in Table 2, it is clear that 54.00 per cent of the mango growers had medium level of mass media exposure, whereas 24.00 per cent and 22.00 per cent of them had high and low level of mass media exposure. It can be concluded that majority (78.00 per cent) of the respondents had medium to high level of mass media exposure. This finding is in concurrence with the results of Jadav (2005).

Psychological variables:

Extent of adoption:

The data of Table 3 clearly indicate that majority of the respondents (67.00 per cent) possessed medium level of extent of adoption followed by high (21.00 per cent) and low (12.00 per cent) extent of adoption of recommended mango production technology. This finding was in concurrence with the findings of Verma and Munshi (2003).

Management orientation:

It can be observed from the data presented in Table 3 that majority of the respondents (65.00 per cent) were found in medium category of management orientation, while 25.00 per cent and 10.00 per cent of the mango growers were found in high and low category of management orientation, respectively.

Innovativeness:

The data in Table 3 revealed that the majority (54.00 per cent) of mango growers had best level of innovativeness followed by average (31.00 per cent) and poor (15.00 per cent) level of innovativeness of mango growers. This finding was in agreement with the observations of Kotadiya (2006).

Progressiveness:

It is evident from the data presented in Table 3 that

Table 3: Psychological variables of mango growers **(n=100)**

Sr. No.	Characteristics	Category	Frequency	Per cent
1.	Extent of adoption	Low (up to 61.27)	12	12.00
		Medium (61.28-90.19)	67	67.00
		High (above 90.19)	21	21.00
2.	Management orientation	Low (up to 32.97)	10	10.00
		Medium (32.98-42.55)	65	65.00
		High (above 42.55)	25	25.00
3.	Innovativeness	Poor (up to 1.84)	15	15.00
		Average (1.85-2.94)	31	31.00
		Best (above 2.94)	54	54.00
4.	Progressiveness	Poor (up to 6.63)	08	8.00
		Average (6.64-8.03)	84	84.00
		Best (above 8.03)	08	8.00
5.	Knowledge of mango growers	Low (up to 23.49)	07	7.00
		Medium (23.50-31.66)	74	74.00
		High (above 31.66)	19	19.00

Table 4: Practicewise extent of adoption of improved mango production technology by mango growers **(n = 100)**

Sr. No.	Practice	Weightage	Mean score	Percentage	Rank
1.	Intercultural operation	12	6.45	53.75	VIII
2.	Selection of variety	2	2.00	100.00	I
3.	Planting distance	7	6.79	97.00	II
4.	Organic manure	11	4.71	42.77	IX
5.	Chemical fertilizers	12	10.41	86.75	V
6.	Irrigation	16	10.80	67.50	VI
7.	Integrated pest management	14	13.50	96.20	III
8.	Integrated disease management	15	13.85	92.33	IV
9.	Inter cropping	3	1.08	36.00	X
10.	Use of hormones/paclabutrazol (Cultar)	8	4.75	55.60	VII
	Practice	100	74.04		

majority (84.00 per cent) of mango growers had average level of progressiveness. This was followed by equal number (8.00 per cent) of respondents that fell in best and poor levels of progressiveness. Similar finding was reported by Kotadiya (2006).

Knowledge of mango growers:

It is evident from the data presented in Table 3 that the majority (74.00 per cent) of the respondents had average level of knowledge regarding improved mango production technology followed by best (19.00 per cent) and poor (7.00 per cent) level, respectively. This finding is in line with the results of Kotadiya (2006).

Practicewise extent of adoption of improved mango production technology by mango growers:

The practice wise scores were assigned to all 10 practices on the basis scores obtained by the respondents adopting particular practices. The mean scores were worked out for all the 10 practices. The mean score further converted into percentage and ranks were assigned to each practice. The overall mean percentage of 10 practices was 74.04 per cent (Table 4). These mean percentages were considered for distinguished more or less adopted practices. The results showed that 10 practices of technology adopted by mango growers were arranged according to their ranks in descending order. The adoption of variety occupied first rank (100 per cent). This was followed by planting distance (rank second, 97.00 per cent); integrated pest management (rank third, 96.20 per cent); integrated diseases management (rank fourth, 92.33 per cent); chemical fertilizer (rank fifth, 86.75 per cent); irrigation facilities (rank sixth, 67.50 per cent); use of hormons (rank seventh, 55.60 per cent); intercultural operation (rank eights, 53.75 per cent); application of organic manure (rank ninth, 42.77 per cent) and intercropping (rank tenth, 36.00 per cent).

It can be summarized that the practices *viz.,* variety, planting distance, integrated disease management, and integrated insects pests management were highly adopted by the mango growers. While practices like intercropping and use of organic manure occupied almost last position in adoption.

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