



## Integrated Horticultural Development Programme : An impact analysis

M.N. POPAT, DAXA G. KOTADIA AND V.J. SAVALIYA

See end of the article for authors' affiliations

Correspondence to :

**M.N. POPAT**  
Department of  
Extension Education,  
College of Agriculture,  
Junagadh Agricultural  
University  
JUNAGADH  
(GUJARAT) INDIA  
dr\_mohanbhai@yahoo.co.in

### ABSTRACT

The study was conducted in Junagadh district of Gujarat State. Total 128 beneficiary farmers (BFs) and 128 non-beneficiary farmers (NBFs) were selected as respondents. The level of knowledge and extent of adoption of respondents were measured using the developed standardized scales. Majority of the BFs (70.31 per cent) and NBFs (68.75 per cent) had medium level of knowledge about Improved Mango Production Technology (IMPT) with mean knowledge score 28.51 and 19.23, respectively. The practices like varieties, chemical fertilizers, planting distance, irrigation, disease control, tillage, organic manure, insect-pest control, use of hormones were adopted more than 60.00 per cent by BFs. Whereas, the higher per cent (more than 60.00 per cent) adopted practices of IMPT by NBFs were chemical fertilizers and variety. The adoption index of BFs was found significantly higher than NBFs. Majority (73.44 per cent) of the BFs had favourable attitude towards IHDP with respect 86.20 mean attitude score, whereas 64.84 per cent of the NBFs had favourable attitude towards IHDP with 56.20 mean attitude score.

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### INTRODUCTION

Horticulture sector covering only 8.00 per cent of the total crop area in the country, contributes 24.50 per cent of GDP and 54.55 per cent to export earnings in the agriculture sector (Anonymous, 2001). Horticulture has become an integral part of food and nutritional security and an essential ingredient of economic security. Adoption of horticulture by small and marginal farmers has brought prosperity in many regions of the country.

The Gujarat State Government had launched a programme named "Integrated Horticultural Development Programme (IHDP)" in eighth five year plan. The main theme behind the programme was to increase the area and production of horticultural crops. The consequences impact of Integrated Horticultural Development Programme is reflected in terms of the level of knowledge and extent of adoption of mango production technology and attitude of beneficiaries towards Integrated Horticultural Development Programme. Therefore, it is felt worthwhile to investigate its impact with respect to level of knowledge and extent of adoption of

respondents about IMPT. Keeping these points in view, this investigation was undertaken with the objective to assess the level of knowledge and extent of adoption of BFs and NBFs and to analyze the practice wise adoption of IMPT by both of the categories of the farmers. It was also studied the attitude of BFs and NBFs towards IHDP.

### METHODOLOGY

The study was conducted in Junagadh district of Gujarat State. Total 128 beneficiary farmers (BFs) were selected purposively from 22 villages of five selected Talukas viz., Visavadar, Junagadh, Mendarda, Malia hatina and Una. The same number of non-beneficiary farmers (NBFs) were selected randomly from the respective villages. In order to measure the level of knowledge and extent of adoption of respondents, the standardized scales developed for the purpose were used. The selected independent variables were measured either with the help of developed scale or by developing schedules and indices. The data were collected by personal interview either at home or at farm. The data so collected were

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coded, classified, tabulated and analyzed in order to make the findings meaningful.

## RESULTS AND DISCUSSION

The findings of the present study have been presented under following heads:

### Level of knowledge of BF's and NBF's about improved mango production technology (IMPT):

The knowledge scores of the respondents for IMPT were calculated as sum of the correct responses and then converted in to percentage. The respondents were classified based on mean and standard deviation as low, medium and high. It is evident from the result presented in Table 1 that 70.31 per cent of BF's had medium level of knowledge, whereas 15.63 per cent and 14.06 per cent had high and low level of knowledge about IMPT, respectively. The expected range of score was 0 to 35 and the observed score ranged between 16 to 35 with a mean score of 28.51 and standard deviation 4.37. The co-efficient of variation was 15.33 per cent in case of BF's. Hence, it can be concluded that majority of the BF's had medium level of knowledge.

In case of NBF's, 68.75 per cent had medium level of knowledge, whereas 18.75 per cent and 12.50 per cent had low and level high of knowledge about IMPT, respectively. The observed score ranged between 12 to 30 with a mean score of 19.23 and standard deviation 4.27. The co-efficient of variation was 22.20 per cent. Hence, it can be concluded that majority of the NBF's had medium level of knowledge about IMPT. The comparison of mean knowledge score of BF's and NBF's indicated that BF's had higher knowledge of IMPT as compared to NBF's ( $Z=17.162^{**}$ ).

This might be due to the good social participation, significant extension participation and mass media exposure, progressive nature and frequent guidance

provided by experts which might have helped BF's in increasing their knowledge about IMPT. This finding was in line with those of Rakholia (1996) and Lakera and Sharma (2003).

### Extent of adoption of BF's and NBF's about improved mango production technology (IMPT):

For the measurement of adoption, the data were collected and analyzed in two parts:

### Practice wise extent of adoption of BF's and NBF's about improved mango production technology (IMPT):

To assess the practice wise extent of adoption of BF's and NBF's about IMPT, ten improved practices scrutinized by the experts in the field were considered. The practice wise scores (as standardized mean score) were assigned to each adopted practice making a total of 100. On the basis of practice wise scores obtained by the respondents adopting particular practices, the mean scores were worked out for all the 10 practices. The mean score was further converted into percentage for all the practices. The ranks were assigned to each practice for BF's and NBF's. The overall mean percentage of 10 practices were 81.10 per cent and 44.41 per cent of BF's and NBF's, respectively. These mean percentage were considered for distinguishing more or less adopted practices. The results in this regard are presented in Table 2.

Table 2 shows that ten practices of IMPT adopted by BF's were arranged according to their ranks in descending order. The adoption of varieties occupied the first rank. This was followed by chemical fertilizers (rank second); planting distance (rank third); irrigation (rank fourth); disease control (rank fifth); tillage (rank sixth); organic manure (rank seventh); insect-pest control (rank eighth); use of hormones (rank ninth) and inter cropping (rank tenth), respectively.

**Table 1: Level of knowledge of BF's and NBF's about IMPT**

Category of farmer	Level of knowledge	No.	Per cent	Observed score	Mean score	S.D.	C.V. %
BFs (N=128)	Low (< 24.14)	18	14.06	16.00 to 35.00	28.51	4.37	15.33
	Medium (24.14 to 32.88)	90	70.31				
	High (> 32.88)	20	15.63				
NBFs (N=128)	Low (< 14.96)	24	18.75	12.00 to 30.00	19.23	4.27	22.20
	Medium (14.96 to 23.50)	88	68.75				
	High (> 23.50)	16	12.50				
Mean difference					9.28		

"z" value = 17.162\*\*

\*\* indicates significance of value at P=0.01

NB: Expected score for both the categories (BF's and NBF's) ranged between 0 to 35

**Table 2: Practice wise adoption of BF and NBFs about IMPT**

Sr. No.	Name of practice	Possible score	Category of farmer					
			BFs			NBFs		
			Mean	Per cent	Rank	Mean	Per cent	Rank
1.	Tillage	12	10.00	83.33	VI	6.00	50.00	IV
2.	Variety	2	2.00	100.0	I	1.25	62.50	II
3.	Planting distance	7	6.05	86.43	III	3.72	53.14	III
4.	Organic manure	11	9.00	81.82	VII	5.25	47.73	V
5.	Chemical fertilizers	12	10.50	87.50	II	7.80	65.00	I
6.	Irrigation	16	13.55	84.68	IV	6.05	37.81	VIII
7.	Insect-pest control	14	10.10	72.14	VIII	6.06	43.21	VII
8.	Disease control	15	12.50	83.34	V	4.02	28.00	X
9.	Inter cropping	3	1.70	56.66	X	1.41	47.00	VI
10.	Use of hormones	8	5.70	71.25	IX	2.68	33.50	IX
	Total	100	81.10			44.41		

“t” value = 2.499\*\*

Table value of ‘t’ at 0.05 level is 2.306

In case of NBFs, it was observed that the first rank was occupied by adoption of chemical fertilizers followed by variety (second); planting distance (third); tillage (fourth); organic manure (fifth); inter cropping (sixth); insect-pest control (seventh); irrigation (eighth); use of hormones (ninth) and disease control (tenth), respectively.

From the above discussion it can be inferred that the mean adoption index in case of BF was high as compared to NBFs. The calculated “t” value was found significant at 0.05 level of probability indicating thereby that the mean adoption index of IMPT by BF was found significantly higher than NBFs. It can be summarized that the practices *viz.*, variety, chemical fertilizers and planting distance were highly adopted by BF. While practices *viz.*, insect-pest control, disease control and use of hormones occupied almost last position in adoption. It is worth to note that in case of both the categories of respondents, the plant protection measures stood almost least adopted even though it is an important practice. This may be due to the fact that the plant protection measures in mango orchard are difficult.

### Extent of adoption of BF and NBFs about improved mango production technology (IMPT):

The adoption quotient developed by Chttopadhyay (1974) was used with slight modifications.

Adoption index for each respondent was calculated on the basis of maximum score obtained by him. The BF and NBF were classified into three categories on the basis of mean and standard deviation as low, medium and high.

From the data presented in Table 3, it is observed that 67.97 per cent, 17.97 per cent and 14.06 per cent of the BF were medium, high and low adopters of IMPT, respectively. The expected range of adoption index was 0 to 100 and obtained range was between 45 to 96 with mean index of 81.10 and standard deviation 9.67. The co-efficient of variation was 11.93 per cent. It indicated that the mean index of BF was found to be more than 50.00 per cent and maximum index obtained was 96.00 per cent and the variation within the group was 11.93 per cent. Thus, majority of the BF were found to be medium adopters of IMPT and the trend of adoption was medium to high.

**Table 3: Extent of adoption of BF and NBFs about IMPT**

Category of farmer	Extent of adoption	No.	Per cent	Observed index	Mean index	S.D.	C.V. %
BFs (N=128)	Low (< 71.43)	18	14.06	45.00 to 96.00	81.10	9.67	11.93
	Medium (71.43 to 90.77)	87	67.97				
	High (> 90.77)	23	17.97				
NBFs (N=128)	Low (< 34.78)	30	23.45	23.00 to 72.00	44.41	9.63	21.68
	Medium (34.78 to 54.04)	82	64.05				
	High (> 54.04)	16	12.50				
Mean difference					36.67		

“z” value = 30.358\*\*      \*\* indicates significance of value at P=0.01

NB: Expected score for both the categories (BFs and NBFs) ranged between 0 to 100

**Table 4: Level of attitude of BF's and NBF's towards IHDP**

Category of farmer	Level of attitude	No.	Per cent	Observed score	Mean score	S.D.	C.V. %
BFs (N=128)	Less favourable (< 71.10)	11	8.59	65 to 110	86.20	9.10	10.56
	Favourable (71.10 to 95.30)	94	73.44				
	Highly favourable (> 95.30)	23	17.97				
NBFs (N=128)	Less favourable (< 46.48)	25	19.53	40 to 82	56.20	9.72	17.30
	Favourable (46.48 to 65.92)	83	64.84				
	Highly favourable (> 65.92)	20	15.63				
Mean difference					30.00		

“z” value = 25.479\*\*

\*\* indicates significance of value at P=0.01

NB: Expected score for both the categories (BFs and NBFs) ranged between 24 to 120

In case of NBFs, 64.05 per cent, 23.45 per cent and 12.50 per cent of the NBFs were medium, low and high adopters of IMPT, respectively. The minimum and maximum index achieved between 23 to 72 with a mean index of 44.41 and standard deviation 9.63. The co-efficient of variation was 21.68 per cent. It indicated that the mean index of NBFs was found to be less than 50.00 per cent and maximum index obtained was 72.00 per cent and the variation within the group was 21.68 per cent. Thus, majority of the NBFs were found to be medium adopters of IMPT and the trend of adoption was medium to low. The BF's and NBF's differed significantly ( $Z=30.358^{**}$ ) in extent of adoption and indicated that the BF's had adopted more IMPT as compared to NBF's.

This might be due to the fact that BF's had higher level of knowledge, more social participation and extension participation and higher exposure to mass medias, which led them towards higher adoption of IMPT. This finding was in conformity with those of Karkar (1998) and Lakera and Sharma (2003).

#### **Level of attitude of BF's and NBF's towards integrated horticultural development programme (IHDP):**

The standardized attitude scale was developed. It was used to measure the level of attitude of the respondent farmers towards IHDP. The data in this regard were collected from the respondents and they were categorized by using the mean and standard deviation as less favourable, favourable and highly favourable.

The perusal of the data in Table 4 indicates that 73.44 per cent of the BF's had favourable attitude towards IHDP

whereas, 17.97 per cent and 8.59 per cent had highly favourable and less favourable attitude towards IHDP, respectively. The expected range of score was 24 to 120. The observed score ranged between 65 to 110 with a mean score of 86.20 and standard deviation 9.10. The co-efficient of variation was 10.56 per cent in case of BF's. Hence, it can be concluded that majority of the BF's had favourable attitude towards IHDP.

In case of NBF's, 64.84 per cent had favourable attitude towards IHDP whereas, 19.53 per cent and 15.63 per cent had less favourable and highly favourable attitude, respectively. The observed score ranged between 40 to 82 with a mean score of 56.20 and standard deviation 9.72. The co-efficient of variation was 17.30 per cent. Hence, it can be concluded that majority of the NBF's had favourable attitude towards IHDP. The comparison of mean score of BF's and NBF's indicated that BF's had highly favourable attitude towards IHDP as compared to NBF's ( $Z=25.479^{**}$ ).

This might be due to the fact that all the BF's were benefited under the IHDP regarding the IMPT and also other related activities without paying any charge, which might have played the major role in building up favourable attitude of BF's towards IHDP. This finding is supported by the finding of Rakholia (1996).

Authors' affiliations:

**DAXA G. KOTADIA AND V.J. SAVALIYA,**  
Department of Extension Education, College of  
Agriculture, Junagadh Agricultural University,  
JUNAGADH (GUJARAT) INDIA

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