COMPARATIVE STUDY ON KNOWLEDGE AND ADOPTION OF RECOMMENDED MANGO CULTIVATION TECHNOLOGY BY THE TRAINED AND UNTRAINED FARMERS

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ABSTRACT

The present study Bhor, Velhe and Haveli tashils of Pune district were purposively selected which comes under College Development Block, Pune. In all, six villages were selected from selected tashils having maximum area under mango fruit crop. In consultation with Agricultural Assistant, village-wise lists of trained and untrained mango growers were prepared. From each selected village, 10 mango growers comprising 5 trained and 5 untrained were selected randomly. Total 60 respondents were selected for the study. A well structured interview schedule was prepared for collecting data from the respondents. The results revealed that all the respondents (100.00 %) both trained and untrained farmers had knowledge about land selection, planting season and method, water management, inter-culturing, pruning, fruit bearings, maturity signs, control of loranthus, preparation of processed products viz., pickles, juice, etc., whereas in case of recommended fertilizer dose, 86.66 per cent trained and 66.66 per cent untrained farmers had knowledge. The data regarding practice wise adoption of recommended technology of mango revealed that all of the trained respondents had completely adopted the practices viz., planting season, method, spacing, maturity indices of harvesting, while the practices partially adopted by majority of the trained farmers were; storage of fruits after dipping in bavistin solution (80.00 %) and spraying of copper oxychloride 0.25% to control anthracnose (60.00 %). The important constraints reported by majority of the respondents were; high interest rate (90.00 %), greater fluctuation in prices (86.66 %), shortage of labour (83.33 %), insufficient time for repayment of credit (80.00 %) and lack of organized market (80.00 %). The important suggestions made by majority of the respondents were; flexible repayment of loan in case of yield failure (80.00 %) and organized market system with constant price (76.66 %),

KEY WORDS: Mango, Bavistin, Copper oxychloride, Anthracnose

INTRODUCTION

State Agricultural Universities has three important mandates *viz.*, education, research, extension. To serve the extension need of farmers, clients, Agri-entrepreneurs, Mahatma Phule Agricultural University has established Regional Extension Centers (REC) and District Extension Centers (DEC) at regional and district

levels, respectively. At village level, College Development Block is working under each constituent college of MPKV. It works as the research and technology centre for conducting research projects and demonstrating university technology at farmer's field as well as serves as a research laboratory for UG and PG students. Several efforts of technology transfer have been made by extension department in the block since 1956. Farmers from selected villages were trained through various extension activities *viz.*, trainings, group discussions, exposure visits, demonstrations, etc. In order to know the effect of extension work, present study was undertaken. Farmers provided with technical guidance and who have undergone through training programmes were considered as trained farmers and those unreached and uncovered were treated as untrained farmers under the study. Mango is main fruit crop grown in College Development Block, Pune. Hence, it felt necessary to study the knowledge and adoption of horticultural technology by the trained and untrained mango growers. It is, therefore, decided to study the prevailing and recommended cultivation practices followed by the farmers in that area, so that future suggestions and recommendation could be made to improve the existing situation.

METHODOLOGY

For the present study Bhor, Velhe and Haveli tashils of Pune district were purposively selected which comes under College Development Block, Pune. In all, six villages were selected from selected tashils having maximum area under mango fruit crop. In consultation with Agricultural Assistant, village-wise lists of trained and untrained mango growers were prepared. From each selected village, 10 mango growers comprising 5 trained and 5 untrained were selected randomly. Total 60 respondents were selected for the study. A well structured interview schedule was prepared for collecting data from the respondents.

RESULTS AND DISCUSSION

Practice wise knowledge of trained and untrained mango growers

Data presented in Table 1 revealed that all the respondents (100.00 %) both trained and untrained farmers had knowledge about land selection, planting season and method, water management, inter-culturing, pruning, fruit bearings, maturity signs, control of loranthus, preparation of processed products *viz.*, pickles, juice, etc., whereas in case of recommended fertilizer dose, 86.66 per cent trained and 66.66 per cent untrained farmers had knowledge. Near about three fourths (70.00 %) of the trained farmers and 63.33 per cent of the untrained farmers had knowledge regarding use of pachlobutrazol for managing irregular fruit bearing. Knowledge about pest control was low among untrained famers (80.00 %) as compared to trained mango growers (90.00 %). Trained farmers were found having more knowledge of mango processing as compared to untrained farmers. Similar findings were reported by Singh and Singh (2008).

Practice wise adoption of recommended technology of mango by the trained and untrained growers

The data regarding practice wise adoption of recommended technology of mango presented in Table 2 revealed that all of the trained respondents had completely adopted the practices *viz.*, planting season, method, spacing, maturity indices of harvesting, while the practices partially adopted by majority of the trained

farmers were; storage of fruits after dipping in bavistin solution (80.00 %) and spraying of copper oxychloride 0.25% to control anthracnose (60.00 %). Similar findings were reported by Godse (2010). However, in case of adoption of recommended varieties of mango nearly equal numbers of trained and untrained farmers (40.00 and 36.66 %) were adopted keshar variety, whereas 30.00 and 26.66 per cent had adopted alphanso variety. Data regarding interculturing, pruning, control of pest and diseases stated that untrained farmers adopted these practices partially as compare to the trained one. While not a single trained or untrained farmers had adopted the propagation methods *viz.*, inarch grafting, stone grafting, softwood grafting, side grafting and shield budding in mango. More than 50.00 per cent trained or untrained farmers not used the Paclobutrazol for managing irregular bearing. All respondents prepared pickles, juice for household purpose, but not for sell. While none had adopted fruit processing like Squash, Powder, *Burphy* and *Murambe* making.

Constraints faced by the mango growers in adoption of recommended technology

The important constraints reported by majority of the respondents were; high interest rate (90.00 %), greater fluctuation in prices (86.66 %), shortage of labour (83.33 %), insufficient time for repayment of credit (80.00 %), lack of organized market (80.00 %), attack of pest and diseases (76.66 %), lack of storage facility (66.66 %) and high cost of chemical fertilizers (60.00 %). Similar observations were also recorded by Dhakane (2005).

Suggestions of the mango growers to overcome the constraints in adoption of recommended technology

The important suggestions made by majority of the respondents were; flexible repayment of loan in case of yield failure (80.00 %), organized market system with constant price (76.66 %), timely information about outbreak and attack of pests and diseases with proper control measure (70.00 %), regulation of wages of labour to avoid shortage of labour (60.00 %), etc.

CONCLUSION

From the present study, it can be concluded that the knowledge and adoption of recommended mango production technology by the trained farmers is high as compare to untrained farmers, hence there is need to reach to the unreached farmers in block and provide them technical guidance regarding propagation methods, plant protection measures, development of fruit orchards scientifically, preparation of processed fruit products etc. Study further concluded that there should be organized market system with universal price to avoid price fluctuation in fruit crops, flexible repayment of loan, regulation in wages to avoid labour shortage etc. However, there is a scope for crop diversification and increase the production as well as area under fruit crops in college development block.

REFERENCES

Dhakane S. S. (2005). Knowledge and adoption of recommended grape production technology by the farmers in Barshi tahsil of Solapur. M.Sc. (Agri.) Thesis (Unpublished) Submitted to MPKV, Rahuri.

Singh, R. and Singh, M. (2008). Relationship of trained and untrained dairy entrepreneur's profile with skill related to Dairy Entrepreneurial Training

Programme. Asian J. Ext. Edu., 27(1&2): 13-17.

Godse, S. S. (2010). Plant protection practices followed by mango growers in Sindhudurg district. M.Sc. (Agri.) Thesis (Unpublished) Submitted to BSKKV, Dapoli.

Table 1: Practice wise knowledge of trained and untrained mango growers

Sr. No.	Recommended Technology	Knowledge of Mango Growers							
		Trained (n=30)				Untrained (n=30)			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
1	Selection of land	30	100.00	00	00.00	30	100.00	00	00.00
2	Recommended Varieties								
	a. Keshar	30	100.00	00	00.00	30	100.00	00	00.00
	b. Hapus	30	100.00	00	00.00	30	100.00	00	00.00
	c. Pairy	30	100.00	00	00.00	30	100.00	00	00.00
	d. Sindhu	24	80.00	6	20.00	18	60.00	12	40.00
	e. Sai sugandha	20	66.66	10	33.34	17	56.66	13	43.34
3	Propogation methods								
	a. Inarch grafting	23	76.66	7	23.34	23	76.66	7	23.34
	b. Stone grafting	21	70.00	9	30.00	20	66.66	10	33.34
	c. Softwood grafting	20	33.34	20	66.66	11	36.66	19	58.66
	d. Side grafting	22	73.33	8	26.66	21	70.00	9	30.00
	e. Shield Budding	24	80.00	6	20.00	20	66.66	10	33.34
4.	Planting Season	30	100.00	00	00.00	30	100.00		
5.	Planting Method	30	100.00	00	00.00	24	80.00	6	20.00
6.	Fertilizer Dose	26	86.66	4	13.34	20	66.66	10	33.34
7.	Water Management	30	100.00	00	00.00	30	100.00	00	00.00
8.	Interculturing	30	100.00	00	00.00	30	100.00	00	00.00
9.	Prunning	30	100.00	00	00.00	30	100.00	00	00.00
10.	Fruit Bearing	30	100.00	00	00.00	30	100.00	00	00.00
11.	Use of Paclobutrazol	21	70.00	9	30.00	19	63.33	11	36.66
12	Pest Control								
	a. Mango hoppers	27	90.00	3	10.00	24	80.00	6	20.00
	b. Stone Borer	28	93.33	2	6.67	24	80.00	6	20.00
	c. Fruit Fly								
13	Disease Control								
	a. Anthracnose	27	90.00	3	10.00	24	80.00	6	20.00
	b. Powdery Mildew	25	83.33	5	16.67	24	80.00	6	20.00
	c. Loranthus	30	100.00	00	00.00	30	100.00	00	00.00
14	Maturity Indices	30	100.00	00	00.00	30	100.00	00	00.00
15	Storage of Fruits	24	80.00	6	20.00	22	73.33	8	26.67
16	Processed fruit products								
	a. Mango pickle	30	100.00	00	00.00	30	100.00	00	00.00
	b. Juice	30	100.00	00	00.00	30	100.00	00	00.00
	c. Squash	20	66.66	10	33.34	7	23.33	23	76.67
	d. Powder	17	56.66	13	43.34	6	20.00	24	80.00
	e. Burphy	22	73.33	8	26.66	14	46.66	16	53.34
	f. Murambe	24	80.00	6	20.00	15	50.00	15	50.00

Table 2: Practice wise adoption of recommended technology of mango by the trained and untrained growers

Sr. No.	Recommended Technology	Level of Adoption of Mango Growers											
		Trained (n=30)						Untrained (n=30)					
		Complete		Partial		No		Complete		Partial		No	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Selection of land	17	56.66	13	43.34			7	23.33	23	76.66		
2	Recommended varieties												
	a. Keshar	12	40.00	-	-	-	-	11	36.66	-	-	-	-
	b. Hapus	9	30.00	-	-	-	-	7	26.66	-	-	-	-
	c. Pairy	5	16.66	-	-	-	-	6	20.00	-	-	-	-
	d. Sindhu	3	10.00	-	-	-	-	4	13.33	-	-	-	-
	e. Sai sugandha	1	3.33	-	-	-	-	2	6.66	-	-	-	-
3	Propogation methods												
a.	Inarch grafting	-	-	-	-	30	100.00	-	-	-	-	30	100.00
b.	Stone grafting	-	-	-	-	30	100.00	-	-	-	-	30	100.00
c.	Softwood grafting	-	-	-	-	30	100.00	-	-	-	-	30	100.00
d.	Side grafting	-	-	-	-	30	100.00	-	-	-	-	30	100.00
e.	Shield Budding	-	-	-	-	30	100.00	-	-	-	-	30	100.00
4.	Planting Season July-sept	30	100.00	-	-	-	-	30	100	-	-	-	-
5.	Planting method	30	100.00	-	-	-	-	21	70.00	9	30.00		
6.	Fertilizer Dose	14	46.66	11	36.33	5	16.68	6	20.00	12	40.00	12	40.00
7.	Water Management	26	86.66	4	13.33	-	-	24	80.00	6	20.00	-	-
8.	Interculturing	15	50.00	15	50.00	-	-	8	26.66	22.	73.34	-	-

Table 2 cont….

9.	Prunning	21	70.00	9	30.00	-	-	8	26.66	22.	73.34	-	-
10.	Fruit Bearing	22.	73.34	8	26.66	-	-	21	70.00	-	-	9	30.00
11.	Use of Paclobutrazol	10	33.34	4	13.34	16	53.32	13	43.33	-	-	17	56.66
12	Pest Control												
a.	Mango hoppers	15	50.00	12	40.00	3	10.00	8	26.67	17	56.66	5	16.66
b.	Stone Borer	18	60.00	5	16.66	7	23.34	5	16.66	18	60.00	7	23.34
c.	Fruit Fly	10	33.34	11	36.66	9	30.00	7	23.33	16	53.33	7	23.34
13	Disease Control												
a.	Anthracnose	9	30.00	18	60.00	3	10.00	8	26.67	16	53.33	6	20.00
b.	Powdery Mildew	17	56.66	8	26.67	5	16.66	12	40.00	14	46.66	4	13.33
c.	Loranthus	21	70.00	9	30.00	-	-	-	-	7	23.33	23	76.66
	Maturity Indices	30	100.00	-	-	-	-	30	100.00	-	-	-	-
	Storage of Fruits	-	-	24	80.00	6	20.00	-	-	7	23.33	23	76.66
	Processed fruit products												
a.	Mango pickle	30	100.00	-	-	-	-	28	93.33	-	-	2	6.67
b.	Juice	30	100.00	-	-	-	-	30	100.00	-	-		
c.	Squash	-	-	-	-	30	100.00	-	-	-	-	30	100.00
d.	Powder	-	-	-	-	30	100.00	-	-	-	-	30	100.00
e.	*Burphy*	-	-	-	-	30	100.00	-	-	-	-	30	100.00
f.	*Murambe*	-	-	-	-	30	100.00	-	-	-	-	30	100.00

(Figures in the parentheses indicate percentages)

Table 3: Constraints faced by the mango growers in adoption of Recommended technology of mango cultivation

(n=60)

Sr. No.	Constraints	Respondents	
		Number	%
1	Attack of pest and diseases	46	76.66
2	Shortage of labours	50	83.33
3	High cost of chemicals and fertilizers	36	60.00
4	Non availability of credit on time	16	26.66
5	High interest rate	54	90.00
6	Insufficient time for repayment of credit	48	80.00
7	Lack of organized market	48	80.00
8	Lack of transport facility	18	30.00
9	Exploitation by local traders	24	40.00
10	Lack of storage facility	40	66.66
11	Greater fluctuation in prices	52	86.66

Table 4: Suggestions made by the mango growers in adoption of recommended technology

(n=60)

Sr. No.	Suggestions	Respondents	
		Number	%
1	Regulation of wages of labour to avoid shortage of labour	36	60.00
2	Timely information of outbreak and attack of pest and diseases with its control measure	42	70.00
3	Regulation in the prices of chemicals and fertilizers	30	50.00
4	Timely availability of credit	12	20.00
5	Flexible repayment of loan in case of yield failure	48	80.00
6	Organized market system with universal price	46	76.66
7	Compulsory registration of local traders	12	20.00
8	Increasing the availability of warehousing and storage facilities	30	50.00

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