Knowledge and adoption behaviour of mango growers

M. RAMASUBRAMANIAN AND M.MANOHARAN
Dept. of Agrl. Extension, Tamil Nadu Agrl. University, Coimbatore - 641 003, Tamil Nadu.

Abstract: Mango is an important fruit crop grown in larger area in India. Though India has rich heritage of origin and blessed with abundant varieties in mango, it could not compete global productivity. It is widely stated that there is neglect in adoption of improved practices which results in lower productivity. A study on knowledge and adoption behaviour of mango growers revealed that majority of mango growers had medium to low level of knowledge and adoption. Majority had medium knowledge about pest and disease management, varieties, growth regulator and manure and adopted the same. Majority had less knowledge about alternate bearing management, pruning, spacing and post-harvest management. The adoption was less for the above recommended practices.

Key words: Adoption / Knowledge level.

Introduction

In India among fruits, mango ranks first in area and production. According to a compilation by the crops division of Union Ministry of Agriculture, mango occupies 9,42,560 ha and 42.6 per cent of the total area under fruits, with a total production of 8.215 million tonnes. India has rich collection of mango varieties and blessed with more commercial plantings than the rest of the world (Ochse, 1961). Mango tree is a part and parcel of rural life because of economic importance of the fruit. Each and every part of mango can be utilized in one way or other. The fully riped fruits are not only considered as delicious table fruits but also used in preparations like jam, jelly, squash, syrup and nectars. The raw fruits before ripening can be used in preparations like pickles and chutney. Ripe fruits are a rich source of carbohydrate, vitamins and minerals. Nowadays value addition and export of mango are the areas where much importance has been given. Mango ranks first in fruit export. Approximately, 12,500 tonnes of fresh fruits valued at Rs.110 million is exported annually. Such an important crop lacks adequate sociological studies. Though a lot of improved technologies have been developed in research stations, they do not come out of the research stations. When compared to global average, the Indian productivity of mango is low. It may be due to the neglect in use of improved practices by farmers. For achieving higher yields, farmers are expected to possess adequate knowledge about the latest technologies. This is the first step in getting the higher yield. Acquiring knowledge will lead to adoption. Adoption of improved practices will give increased yields. Hence, it is imperative to examine farmers' knowledge and adoption levels of improved mango cultivation technologies. In this context, the present study was taken up with the following specific objectives. .

1. To study the overall knowledge and adoption level of mango growers.

2. To find out the practice-wise knowledge and adoption level of technologies by mango growers.

3. To analyse the difference between knowledge and adoption levels.

Materials and Methods

Study was conducted in Srivilliputtur block of Virudhunagar district in Tamil Nadu state. This block has the highest acreage under mango than other blocks of the district. Six villages were purposely selected based on the area under mango. A sample of 120 mango cultivators were selected randomly from the identified six villages. They constituted the respondents for the study.

A list of recommended technologies was prepared by referring the crop production guide jointly prepared by Tamil Nadu Agricultural

Table 1. Distribution of respondents according to their overall knowledge and adoption levels

(n=120)

Category	Knowledge level		Adoption level	
	No.	%	No.	%
Low	50	41.67	40	33.33
Moderate	51	42.50	47	39.17
High	19	15.83	33	27.50

Table 2. Distribution of respondents based on their knowledge and adoption and Z value

(n=120)

S. No.	Items	Knowledge		Adoption		'Z' value
		Number	Per cent	Number	Per cent	
I	*Propagation and planting*					
1	Varieties	96	80.00	74	61.66	2.424*
2	Soil type	77	64.16	70	58.33	0.576
3	Propagation and planting material	69	57.50	10	8.33	9.510**
4	Season of planting	59	49.16	55	45.83	0.516
5	Field preparation	72	60.00	67	55.83	0.306
6	Pit size	74	61.66	48	40.00	2.194*
7	Spacing	23	19.16	29	24.16	-0.947
II	*Agronomic practices*					
8	Manures and fertilizers	91	75.83	57	47.50	4.721
9	Irrigation	65	54.16	48	40.00	2.219*
10	Intercropping	58	48.33	36	30.00	1.509
11	Training and pruning	30	25.00	41	34.16	1.562
12	Growth regulator spray	72	60.00	67	55.83	0.306
13	Alternate bearing management	29	24.16	24	20.00	0.016
III	*Protection technologies*					
14	Hopper management	44	36.66	88	73.33	6.141
15	Nut weevil management	31	25.83	25	20.83	0.919
16	Stem borer management	20	16.66	15	12.50	0.916
17	Fruit fly management	45	37.50	42	35.00	0.403
18	Sooty mould management	34	28.33	11	9.17	3.922**
19	Powdery mildew management	17	14.16	9	7.50	1.669
IV	*Harvest*					
20	Harvest	112	93.33	110	91.67	0.835
21	Post harvest handling	34	28.33	60	50.00	2.276*

University and the State Department of Horticulture for adoption by farmers. These technologies were given to the State Agricultural University (SAU) scientists for judgement and the relevant technologies were selected using the mean and CV values. Interview schedule was prepared. The data was collected through interview. Information thus collected was tabulated and percentage analysis was worked out.

Results and Discusion

Overall knowledge and adoption level

It could be seen from Table 1 that moderate (42.50%) to low (41.67%) level of knowledge about recommended technologies of mango existed with mango cultivators. This finding derives support from Payal (1999) who reported similar findings. There were 39.17 per cent of respondents who had moderate level of adoption, closely followed by low (33.33 per cent) and high (27.50 per cent) adoption levels. Thus, the adoption level was also found moderate to low. This finding is in line with the findings of Mathaiya (1997).

Practice-wise knowledge and adoption levels

Information relating to practice-wise knowledge and adoption was analysed using percentage analysis. The findings are presented in Table 2.

Knowledge level

Moderate level of knowledge was found with respondents about the type of soil suitable for mango cultivation (64.16%), propagation techniques of grafting (57.50%), recommended season of planting viz. pre-monsoon period (49.16%), field preparation (60.00%), pit size of 1 m cube (61.66%) and growth regulator spray of NAA and Planofix (60.00%). The recommended intercrops of guava, papaya and vegetables were known to 48.33 per cent of respondents. Low level of knowledge was observed about the recommended pruning practices (25.00%) and management of alternate bearing (24.17%). Little more than one third of respondents (36.66%) had knowledge about hopper management and fruit fly management (37.50%). Sooty mould and nut weevil management were known to 28.33 per cent and 25.83

per cent respondents respectively. High knowledge existed on varieties (80.00%), manures and fertilizers (75.83%) and harvest (93.33%).

Adoption level

The recommended season of planting was followed by more than two-third (45.83%) of respondents, while more than half (55.83%) of respondents adopted the field preparation recommendations. Fourty per cent of respondents found to adopt the recommended pit size of 1 m cube, whereas 24.16 per cent of respondents adopted the recommended spacing of 10 x 10m. Nearly half of the respondents adopted recommended growth regulator spray (55.83%) and organic manures and fertilizer application (47.50%). Thirty per cent of respondents adopted the intercrops. Adoption level was found to be low in pruning (34.16%) and management of alternate bearing (20.00%). Majority of the respondents (73.33%) adopted the recommended management measures against hopper. Fruit fly management practices were adopted by only 35.00 per cent of respondents. Lower level adoption was found for nut weevil (20.83%) and stem borer management (12.50%) practices.

Differences between knowledge and adoption

There existed a significant difference between knowledge and adoption at one per cent level of probability for the technologies viz. propagation and planting technique, organic manure and fertilizer application, and sooty mould management. Due to some constraints, farmers who knew about the technology did not adopt them in their farm. There existed a significant difference between knowledge and adoption at five per cent level of probability for the technologies viz. varietal selection, pit size and irrigation technology.

The respondents had low level of knowledge and high level of adoption for hopper management and post-harvest handling technologies. There existed significant difference. Farmers adopted these technologies without having knowledge. There was no significant difference between knowledge and adoption for other technologies viz. field preparation and spacing, intercropping, pruning, growth regulator spray, alternate

earing management and nut weevil and stem
prer management.

nplications

The study indicated the following :

Medium to low knowledge and adoption
levels among mango farmers about the
important recommended package of prac-
tices.

. Significantly high knowledge and low
adoption for certain technologies like varieties,
pit size, propagation and planting, water
management, nutrient management and sooty
mould management. This finding indicated
that for the above technologies farmers have
constraints for adoption. The constraints are
to be identified by social scientists, bio-
logical scientists have to work for the
removal of farm level constraints and the
development functionaries have to effec-
tively take up the dissemination work.

iii. Hopper management and post-harvest
management had significantly low knowl-
edge and high adoption. This finding gives
hope that if the constraints are removed
farmers will adopt all the recommended
technologies.

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