Original Research Article

Knowledge Level of the Pomegranate Growers in Maharashtra

ABSTRACT

China is the world's top fruit grower, with India ranking in second. Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh, Gujrat, Bihar, and Uttar Pradesh are the main fruit-growing states in India.The present study was conducted in Maharashtra with the specific objective of "Knowledge Level of the Pomegranate Growers".Nashik, Sholapur and Ahmednagar districts were purposivelyselected for the study as it is one of the maximum pomegranates growingdistricts in Maharashtra state. Total 180 pomegranate growers were selectedfrom six talukas of these districts. Simple tabular analysis used form the data analysis. The study revealed that more than four fifth (83.34 %) of the pomegranate growers had medium level of knowledge about pomegranate production technologies, followed by 12.77 per cent and 03.89 per cent of the pomegranate growers having low and high level of knowledge, respectively.

Keywords: Pomegranate Growers, Knowledge, Level,Technologies

1. INTRODUCTION

The mainstay of the Indian economy is the agriculture sector, which is primarily agricultural despite deliberate attempts to industrialize it. The world's second-largest fruit producers is India. Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh, Gujrat, Bihar, and Uttar Pradesh are the main fruit-growing states in India. Mango, banana, citrus, guava, grape, pineapple, and apple are among the key tropical and subtropical fruit kinds that can be grown in the country because to its edapho-climatic differences. In addition, various little fruits—pomegranate in particular—are becoming significant crops in India's growing horticultural sector. The pomegranate (Punica granatum L.) is a significant fruit found in India's tropical and subtropical regions. It is sometimes referred to as anar, dalim, or matulum. One of the healthiest foods is pomegranate. Although pomegranates are the most ideal fruit crop for India, their average production is very poor when compared to other fruit crops. For the scientists and the farmers, this is a difficult assignment. Farmers have not embraced the most recent technological advancements made by scientists because they lack awareness and knowledge about them. In light of these circumstances, it is essential to pinpoint and thoroughly examine the causes of the technical divide in pomegranates in order to address the present challenge of the poor uptake of advised practices. It is true that other factors, whether directly or indirectly, contribute to the technical divide, and that the proposed package of practices is not the only thing that influences adoption or rejection. This study was conducted to investigate the growers' the level of knowledge.

2. METHODOLOGY

In Maharashtra the pomegranate is being grown on larger area in Nashik, Ahmednagar, Solapur, Sangli, Pune, Dhule, Aurangabad, Satara, Latur and Osmanabad districts. Considering larger area under pomegranate cultivation Nashik, Solapur and Ahmednagar districts were selected for the present investigation. Pomegranate is grown in all talukas of Nashik, Solapur and Ahmednagar districts. In order to select the major pomegranate growing talukas, all the talukas of three districts were listed in the ascending order of magnitude on the area under pomegranate crop in each district. Hence totally six talukas namely Malegaon, Satana, Pandharpur, Sangola, Sangamner and Rahata were selected for the study. A total of 18 villages from six talukas were deliberately chosen based on the number of pomegranate farmers in each village. 10 pomegranate producers were chosen from each village. Consequently, 180 people made up the investigation's sample size. Ex-post facto research design was used for the study. A multistage sample technique is employed in the process of selecting villages, talukas, and districts. The villages that are chosen are used to randomly choose the pomegranate growers. A schedule of interviews was established with details on different variables. Personal interviews were used to gather data. To make the results meaningful, the data were coded, classified, tabulated, and analyzed.

3. Results and Discussion

The findings of the study have been presented below

3.1 Overall knowledge level of pomegranate growers

Table No.1: Distribution of the pomegranate growers according to their level of knowledge

Sl. No.	Knowledge Level	Frequency	Per centage
1.	Low (Up to 68)	23	**12.77**
2.	Medium (69 to 76)	150	**83.34**
3.	High (77 & Above 77)	07	**03.89**
	Total	**180**	**100.00**
		Mean=72.74	**S.D.= 4.21**

According to the data presented in Table 1, more than four fifth (83.34 %) of pomegranate growers had a medium level of knowledge about pomegranate production technologies, with 12.77 percent and 03.89 percent, respectively, having low and high levels of knowledge.

The study showed that majority of the pomegranate growers had satisfactory and medium knowledge level about pomegranate cultivation practices. Through this farming experience, extension contact and social participation they might have acquired knowledge and skill for the better crop cultivation. It might have helped them in better management of their farms. The reason for this could be that, in order to take up efficient pomegranate farming, one need to have more knowledge about cultivation and advanced practices, if one wants to increase his/ her socio-economic status. Higher confidence and more extension contact are usually associated with higher knowledge level.

Table No. 2: Practice wise knowledge of recommended cultivation practices ofpomegranate growers.

Sr. No.	Particulars	Knowledge			
		Yes		No	
		F	%	F	%
A. Soil and Climate					

1.	Selection of Soil -light to medium	177	98.33	03	1.67
2.	Climatic condition required for crop growth (sub-tropical and tropical regions)	180	100	00	00
B. Plant spacing and Variety					
3.	Plant spacing- 4.5×3.0 m.	180	100	0	0
4.	Use of planting material of recommended variety - Mrudula, Phule Aarkta, Bhagawa, Phule bhagwa super, Solapur Lal	180	100	0	0
C. Intercropping					
5.	Intercrops- initially after 2 years of plantation.	155	86.11	25	13.89
6.	Don't grow Solanaceae and Cucurbitaceae crops as intercrop crops.	137	76.11	43	23.89
D. Selection of planting material and Land **preparation**					
7.	Selection of planting material for planting should be from government approved nursery.	157	87.22	23	12.78
8.	Selection of planting material from Gutti kalam	180	100.00	0	0.00
9.	Selection of planting material from tissue culture	141	78.33	39	21.67
10.	Selection of planting material from healthy, disease free and good yielding mother orchard (Oily spot and wilt)	180	100.00	00	00
11.	Deep ploughing during summer season and explore soil for solarization for 2-3 month.	156	86.67	24	13.33
12.	Digging of pits by 60 X 60 X 60 cm cube	172	95.56	8	4.44
E. Flowering					
13.	Selection of Bahar - Ambe bahar	180	100.00	00	00
14.	Selection of Bahar – Mrug bahar	170	94.44	10	5.56
15.	Selection of Bahar – Hasta bahar	170	94.44	10	5.56
16.	Bahar treatment with holding of irrigation water	177	98.33	3	1.67
17.	Use of chemicals for defoliation e.g. Ethrel, Curacron etc.	180	100.00	0	0.00
F. Training					
18.	Training with single stem	112	62.22	68	37.78
19.	Training with multi stem	180	100.00	0	0.00
G. Pruning					
20.	Sterilized the pruning tools with disinfector like Detergents or Dettol	180	100.00	0	0.00
21.	Removing of dead, disease and crisscross branches	180	100.00	0	0.00
22.	Immediately after pruning orchard should be sprayed with Bordo mixture @ 1%	176	97.78	4	2.22
H. Method of Irrigation					
23.	Application of Drip Irrigation	180	100.00	0	0.00
24.	Application of Flood Irrigation	149	82.78	31	17.22
25.	Application of Drip Irrigation + Flood Irrigation	150	83.33	30	16.67
I. Manure and Fertilizers **management**					
26.	Application of FYM @ 40-50 kg per tree after five years onwards	180	100.00	0	0.00
27.	Application of RDF @ 625 g N, 250 g P and 250 g K per plant per year. Split doses of N equally in two weeks. This dose is applicable to five-year age onwards orchard	174	96.67	6	3.33
28.	Application of micronutrients with Calcium, Boran, Ferrus, Magnesium and Zinc.	176	97.78	4	2.22
29.	Application of bio fertilizers	135	75.00	45	25.00
J. Integrated Disease and Pest Management					
30.	Infestation of major diseases like oily spot and wilt	180	100.00	0	00
31.	Occurrence of pin hole borer, stem borer, nematodes, fruitfly and sucking pest	180	100	0	0

32.	For controlling this disease and pests use biological methods	131	72.77	49	27.22
33.	For controlling this disease and pests use recommended Chemicals	180	100	00	00
34.	For controlling oily spot and wilt disease farmers can fallow a disease control schedule recommended by Agricultural University and NRC, Pomegranate.	136	75.55	44	24.44
35.	Use of fruit Bagging or protection covers for controlling pest, diseases as well as improving fruit quality.	104	57.77	76	42.22
L. Yield					
36.	Time requires for the maturity of fruit.	180	100	00	00
37.	Production of pomegranate fruits per one tree	180	100	00	00
38.	Grading of fruits	180	100	00	00

A. Soil and climate

The data shown in Table 2 renders it clear that while 1.67 percent of pomegranate producers had "No" knowledge of "Selection of Soil - light to medium," the majority (98.33 percent) have this knowledge.While 100 % of the pomegranate growers had knowledge regarding cultivation practice i.e. ‘Climatic condition required for crop growth (sub-tropical and tropical regions)’.

B. Plant spacing and variety

It was observed from Table 2 that the 100 % of the pomegranate growers had knowledge regarding recommended cultivation practices of plant spacing and variety i. e. ‘Plant spacing- 4.5×3.0 m,’ and ‘Use of planting material of recommended variety - Mrudula, Phule Aarkta, Bhagawa, Phule bhagwa super, Solapur Lal’.

C. Intercropping

It was concluded from the Table 2 that the majority (86.11 per cent) of the pomegranate growers had knowledgeregarding recommended practice ‘Intercrops- initially after 2 years of plantation.’ and 13.89 % of the pomegranate growers had ‘No’ knowledge regarding it. While 76.11 % of the pomegranate growers had knowledge regarding cultivation practice i.e. ‘Don’t grow Solanaceae and Cucurbitaceae crops as intercrop crops’and 23.89 % of the pomegranate growers had ‘No’ knowledge regarding it.

D. Selection of planting material and land preparation

It was concluded from the Table 2 that the majority (87.22 per cent) of the pomegranate growers had knowledgeregarding recommended practice ‘Selection of planting material for planting should be from government approved nursery’ and 12.78 % of the pomegranate growers had ‘No’ knowledge regarding it. Whereas 100.00 % of the pomegranate growers had knowledge regarding cultivation practice i.e. ‘Selection of planting material from Gutti kalam. Also, majority (78.33 Per cent) and 21.67 % pomegranate growers had said ‘yes’ and ‘No’ knowledge regarding recommended practice ‘Selection of planting material from tissue culture respectively’.

It was also found that 100.00 % pomegranate growers had knowledge regarding cultivation practice i.e. ‘Selection of planting material from healthy, disease free and good yielding mother orchard (Oily spot and wilt)’. Also, majority (86.67 Per cent) and 13.33% pomegranate growers had said ‘yes’ and ‘No’ knowledge regarding recommended practice ‘Deep ploughing during summer season and explore soil for solarization for 2-3 month’. While considering recommended practice‘Digging of pits by 60 X 60 X 60 cm cube’ it was found that 95.56 % pomegranate growers had knowledge regarding it and 4.44 % of the pomegranate growers had ‘No’ knowledge regarding it.

E. Flowering

It was concluded from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Selection of Bahar - Ambe bahar'and Use of chemicals for defoliation e.g. Ethrel, Curacron etc. Also, majority (94.44 percent) and 5.56 % pomegranate growers had 'yes' and 'No' knowledge regarding recommended practice 'Selection of Bahar – Mrug bahar' and 'Selection of Bahar – Hasta bahar'. Whereas Also majority (98.33 percent) and 1.67 % pomegranate growers had 'yes' and 'No' knowledge regarding recommended practice 'Bahar treatment with holding of irrigation water'.

F. Training

It was found from Table 2 that the 62.22 % and 37.78% of the pomegranate growers had knowledge regarding recommended cultivation practices of Training i. e. 'Training with single stem,' and 100.00 % of the pomegranate growers had knowledge regarding practice'Training with multi stem'.

G. Pruning

It was found from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Sterilized the pruning tools with disinfector like Detergents or Dettol' and 'Removing of dead, disease and crisscross branches. Also, majority (97.78 Per cent) and 2.22 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'immediately after pruning orchard should be sprayed with Bordo mixture @ 1%'.

H. Method of irrigation

It was found from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'application of drip irrigation'. Also, majority (82.78 Per cent) and 17.22 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'application of flood irrigation. Whereas 83.33% and 16.67% of the pomegranate growers hadreported 'yes' and 'No' knowledge regarding recommended practice 'application of drip irrigation + flood irrigation'.

I. Manure and fertilizer management

It was found from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Application of FYM @ 40-50 kg per tree after five-yearonwards. Also, majority (96.67 Per cent) and 3.33 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'Application of RDF @ 625 g N, 250 g P and 250 g K per plant per year. Split doses of N equally in two weeks. This dose is applicable to five-year age onwards orchard'. Whereas 97.78 % and 2.22 % of the pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'Application of micronutrients with Calcium, Boran, Ferrus, Magnesium and Zinc'. Also, 75.00 % and 25.00 % of the pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'Application of biofertilizers.

J. Integrated disease and pest management

It was observed from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Infestation of major diseases like oily spot and wilt', 'Occurrence of pin hole borer, stem borer, nematodes, fruitfly and sucking pest' and 'For controlling this disease and pests use recommended Chemicals'. Whereas majority (72.77 per cent) and 27.22 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'For controlling this disease and pests use biological methods. Also, 75.55 % and 24.44 % of the pomegranate growers hadreported 'yes' and 'No' knowledge regarding recommended practice 'For controlling oily spot and wilt disease farmers can fallow a disease control schedule recommended by Agricultural University and NRC, Pomegranate'. However, majority (57.77 per cent) and 42.22 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'Use of fruit Bagging or protection covers for controlling pest, diseases as well as improving fruit quality'.

L. Yield

It was found from the Table 2 that the 100.00 % of the pomegranate growers had knowledge regarding recommended practices 'Time require for the maturity of fruit', 'Production of pomegranate fruits per one tree', and 'Grading of fruits.

4. CONCLUSIONS

The study revealed that more than four fifth (83.34 %) of the pomegranate growers had medium level of knowledge about pomegranate production technologies, followed by 12.77 per cent and 03.89 per cent of the pomegranate growers having low and high level of knowledge, respectively.

1. It is evident from the data that the majority (98.33 per cent) of the pomegranate growers had knowledge regarding 'Selection of soil -light to medium' While 100 % of the pomegranate growers had knowledge regarding cultivation practice i.e. 'Climatic condition required for crop growth (sub-tropical and tropical regions)'.
2. It was observed that the 100 % of the pomegranate growers had knowledge regarding recommended cultivation practices of plant spacing and variety i. e. 'Plant spacing- 4.5×3.0 m,' and 'Use of planting material of recommended variety - Mrudula, PhuleAarkta, Bhagawa, Phulebhagawa super, Solapur Lal'.
3. It was concluded that the majority (86.11 per cent) of the pomegranate growers had knowledge regarding recommended practice 'Intercrops- initially after 2 years of plantation.' and 13.89 % of the pomegranate growers had 'No' knowledge regarding it.
4. It was found that the majority (87.22 per cent) of the pomegranate growers had knowledge regarding recommended practice 'Selection of planting material for planting should be from government approved nursery' and 12.78 % of the pomegranate growers had 'No' knowledge regarding it. Whereas 100.00 % of the pomegranate growers had knowledge regarding cultivation practice i.e. 'Selection of planting material from Guttikalam. Also, majority (78.33 per cent) and 21.67 % pomegranate growers had said 'yes' and 'No' knowledge regarding recommended practice 'Selection of planting material from tissue culture respectively'.It was also found that 100.00 % pomegranate growers had knowledge regarding cultivation practice i.e. 'Selection of planting material from healthy, disease free and good yielding mother orchard (Oily spot and wilt)'.
5. It was concluded that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Selection of Bahar – Ambebahar'and Use of chemicals for defoliation e.g. Ethrel, Curacron etc. Also, majority (94.44 per cent) and 5.56 % pomegranate growers had 'yes' and 'No' knowledge regarding recommended practice 'Selection of Bahar – Mrugbahar' and 'Selection of Bahar – Hasta bahar'.
6. It was found that the 62.22 % and 37.78% of the pomegranate growers had knowledge regarding recommended cultivation practices of Training i. e. 'Training with single stem,' and 100.00 % of the pomegranate growers had knowledge regarding practice 'Training with multi stem'.
7. It was observed that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Sterilized the pruning tools with disinfector like Detergents or Dettol' and 'Removing of dead, disease and crisscross branches.
8. It was found that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Application of drip irrigation'. Also, majority (82.78 per cent) and 17.22 % pomegranate growers had reported 'yes' and 'No' knowledge regarding recommended practice 'Application of flood irrigation'
9. It was concluded that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice 'Application of FYM @ 40-50 kg per tree after five-yearonwards. This dose is applicable to five-year age onwards orchard'. Whereas 97.78 % and 2.22 % of the pomegranate

growers had reported ‘yes’ and ‘No’ knowledge regarding recommended practice ‘Application of micronutrients with Calcium, Boran, Ferrus, Magnesium and Zinc’.

10. It was observed that the 100.00 % of the pomegranate growers had knowledge regarding recommended practice ‘Infestation of major diseases like oily spot and wilt’, ‘Occurrence of pin hole borer, stem borer, nematodes,fruit fly and sucking pest’ and ‘For controlling this disease and pests use recommended Chemicals’.
11. It was found that the 100.00 % of the pomegranate growers had knowledge regarding recommended practices ‘Time require for the maturity of fruit’, ‘Production of pomegranate fruits per one tree’, and ‘Grading of fruits.

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