



RELATIONSHIP BETWEEN SOCIO-ECONOMIC PROFILE AND KNOWLEDGE LEVEL OF POMEGRANATE GROWERS ON POMEGRANATE CULTIVATION TECHNOLOGY IN AHMADNAGAR DISTRICT OF MAHARASHTRA

Shinde Rohini Sharad¹; Dr. Syed H Mazhar²; Prof. (Dr.) Jahanara³

¹M.Sc. Ag. (Agricultural Extension and communication), SHUATS (Prayagraj)

²Associate Professor, Department of Agriculture Extension and Communication, SHUATS (Prayagraj)

³Head, Department of Agriculture Extension and Communication, SHUATS (Prayagraj)

Author E-mail: rohindiraut0909@gmail.com

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ABSTRACT: Pomegranate is one of the most remunerative fruit crops grown in Maharashtra and it is the leading state with 65.51 per cent of the area and 64.61 per cent of total production under pomegranate. This study aims to increase the production and productivity of pomegranate for which in-depth understanding of knowledge and adoption level of pomegranate cultivation practices should be learnt. Descriptive research design is adopted. In Ahmednagar, Shrigonda taluk is selected purposively, since it has major contribution in production of pomegranate. 120 pomegranate growers were selected from 12 village of Shrigonda taluk forms the respondents. Primary data collected from respondents with the help of pre-structured interview schedule during 2021. The results indicated that majority of the respondents had medium level of knowledge and attitude (37.50%). The socio-economic characteristics like age, occupation, annual income, land holding, number of trainings attended, mass media exposure, social participation, extension contact, innovativeness and progressiveness had significant association with the knowledge level of the respondents. Further, awareness generation on harvesting and post-harvest management should be done to pomegranate growers.

Keywords: Knowledge, Pomegranate, Maharashtra and Pomegranate growers



INTRODUCTION

Pomegranate (*Punica granatum* L.) belonging to family puniceae is an economically important fruit crop of arid and semi-arid regions of the world. Pomegranate cultivation today is a highly lucrative and remunerative agriculture business in India. The alluring monetary return per unit area from this crop has resulted in steady increase in area, production and export of pomegranate during last two decades. Pomegranate is in great demand for fresh fruit consumption in national and international markets. Profits up to 1.5 lakhs/ha/annum have been demonstrated by some pomegranate growers. It is, therefore, a highly remunerative crop for replacing subsistence farming and thus alleviating poverty levels, particularly in regions such as Maharashtra.

Besides, Pomegranate research in India is hardly four decades old. With the development of pomegranate cultivation in the country research activities were undertaken at various institutional levels. Pomegranate cultivation in rural area gave helping hands to the educated and uneducated people who are unemployed. Due to cultivation of pomegranate farmers earn good profit because of which farmers are satisfied within their social and economic life. With keeping this view, the present study on recent studies and technologies on adoption behavior of pomegranate growers towards recommended cultivation technology in Ahmednagar district of Maharashtra.

Although India is the largest producer of pomegranate in the world, its productivity (6.9 t/ha) is far below to Turkey (27.25 t/ha), Spain (20.00 t/ha), USA (16.7 t/ha), Israel (12.5 t/ha) and Iran (10.8 Mt/ha). India is the only country in the world where pomegranate is available throughout the year (January – December). Singh (2011) mentioned that large amount of pomegranate export is from Maharashtra state to the other states and in other countries. Maharashtra is the leading state (1st) in India in area and production of pomegranate followed by Karnataka, Andhra Pradesh, Rajasthan. At present 1, 75,000 hectares area under pomegranate



crops with 18, 00,000 tones production, 6.0 million tones per ha productivity and 66.21 per cent total share in production (Anonymous, 2017).

Pomegranate's ability to resist drought, wide adaptability to soil and climatic conditions profitable is without much care and ability to flower in all three seasons has put it way ahead than other crops. Present day liberation and globalization policies of India gave scope for Indian farming community to complete with International Markets. So, to withstand such competition our farmers are expected to produce high quality goods. Research is to be conducted for production qualitative technology for the production of pomegranate crops these goods products, which will ensure greater market price (Baswante *et al*, 2016).

Production technology of the pomegranate has to be greater importance role in more fruit production. It is expected that this study would be useful to the pomegranate growers and Government agencies for planning and implementation of different schemes related to pomegranate cultivation technologies by knowing and thereby increasing the knowledge and adoption of the pomegranate production technology by the grower. In this context, the following objectives were framed;

- 1) To ascertain the socio-economic profile of the respondents.
- 2) To assess the knowledge and attitude of the respondents about recommend pomegranate cultivation technology.
- 3) To determine the relationship between socio-economic profile and knowledge and attitude level of the pomegranate growers in pomegranate cultivation technology.

MATERIAL AND METHODS

For the study, the research design adopted was descriptive in nature since the phenomenon was already occurred. The present study was conducted at Ahmednagar district of Maharashtra. Ahmednagar district of Maharashtra state is selected purposively since pomegranate is a major crop in the area and KVK which conducts a lot of training for knowledge



dissemination. In Ahmednagar, there are 14 talukas. Out of which, Shrigonda taluk is selected purposively, since it has major contribution in production of pomegranate. In Shrigonda taluka of Ahmednagar district, there are 115 villages; out of which 12 villages were selected on the basis of maximum area of pomegranate growers. They were Ajuj, Anandwadi, Belwansi (Bk), Bhangon, Chimbhale, Deodaithan, Gavhanewadi, Ghargaon, hangewadi, Kasti, Kolgaon and Limpangaon. In the selected 12 villages, 10 pomegranate growers were selected from each village. Thus, 120 pomegranate growers were selected from 12 villages and makes the respondents.

RESULTS AND DISCUSSION

The socio-economic profile of the pomegranate growers were studied under various characteristics and the results were presented under table.1.

Table 1. Socio-economic profile characteristics of the Pomegranate growers

(n=120)

S. No.	Characteristics	Category	Frequency	Percentage
1	Age	Young<30	24	20.00
		Middle 31-50	72	60.00
		Old>50	24	20.00
2	Education	Illiterate	12	10.00
		Primary	19	15.83
		High school	29	24.17
		Intermediate	35	29.17
		Graduate and above	25	20.83
3	Family Size	Male	67	55.83



		Female	53	44.17
		Children	48	40.00
4	Annual Income	Low	34	28.33
		Medium	57	47.50
		High	29	24.17
5	Land Holding	<2 .5 acres	39	32.50
		2.5 – 5 acres	36	30.00
		> 5 acres	45	37.50
6	Mass Media Exposure	Low	26	21.67
		Medium	59	49.17
		High	35	29.17
7	Social Participation	Low	29	24.17
		Medium	44	36.67
		High	47	39.17
8	Extension Contact	Low	39	32.50
		Medium	51	42.50
		High	30	25.00
9	Progressiveness	Low	26	21.67
		Medium	54	45.00
		High	40	33.33
10	Innovativeness	Low	38	31.67
		Medium	45	37.50
		High	37	30.83

From table.1, it can be interpreted that 60 per cent of the pomegranate growers were middle aged, followed by equal proportion of them were young (20%) and old aged (20%). More than half of the pomegranate growers (55.83%) were male, 44.17 per cent of them were female



and 40 per cent of their families had children. 47.50 per cent of the pomegranate growers had medium level of annual income, followed by low (28.33%) and high (24.17%) level of annual income. Most of the pomegranate growers had intermediate level of education (29.17%), followed by high school (24.17%), graduate and above (20.83%), primary (15.83%) and illiterate (10%).

Most of the respondents had land holding size of more than 5 acres (37.50%), followed by land holding with less than 2.5 acres (32.50%) and only 30 per cent of the respondents had a land holding of 2.5 – 5 acres. 49.17 per cent of the respondents had medium level of mass media exposure, followed by 29.17 per cent of them had high level of mass media exposure and 21.67 per cent of them had low level of mass media exposure. Meanwhile, 42.50 per cent of the respondents had medium level of extension contact, followed by low (32.50%) and high (25%) level of extension contact.

Majority of the pomegranate growers had high level of source of information, followed by medium (35.83%) level and low (26.67%) level of sources of information. Most of the pomegranate growers had high level (39.17%) of social participation, followed by medium (36.67%) and low (24.17%) level of social participation. Most of the pomegranate growers had medium level of progressiveness (45%), followed by 33.33 per cent of them had high level and 21.67 per cent of them had low level of progressiveness. 37.50 per cent of the pomegranate growers had medium level of innovativeness, followed by 30.83 per cent of them had high level of innovativeness and 31.67 per cent of them had low level of innovativeness.

The knowledge and attitude of the pomegranate growers about the recommended pomegranate cultivation technology under the study has been categorized and presented in table.2



Table.2. Distribution of respondents according to their knowledge level

(n=120)

S. No.	Pomegranate cultivation technology	Response					
		Fully correct		Partially correct		Not correct	
		<i>f</i>	%	<i>f</i>	%	<i>F</i>	%
1	Field preparation						
	i) Traditional Method	5	4.20	78	65.00	37	30.80
	ii) Modern method	45	37.50	54	45.00	21	17.50
2	Improved variety						
	i. Ganesh	39	32.50	37	30.83	44	36.70
	ii. Bhagwa	54	45.00	53	44.17	13	10.83
	iii. Arakta	50	41.77	45	37.50	25	37.50
	iv. Jain tissue culture	30	25.00	62	51.67	28	23.33
3	Cuttings and its treatment						
	i. Carbendazim	47	39.20	60	50.00	13	10.80
	ii. Mancozeb	42	35.00	55	45.80	23	19.17
4	Planting time						
	i. December – January	28	23.33	62	51.67	30	25.00
	ii. January- February	50	41.70	59	49.17	11	9.17
	iii. May – June	31	25.80	66	55.00	23	19.20
5	Spacing of planting	39	32.50	55	45.83	26	21.67
6	Fertilizers						
	i. 625:250:250 g NPK per plant/ha	39	32.50	61	50.83	20	16.67
	ii. 40 kg per plant FYM	63	52.50	50	41.70	7	5.80
7	Irrigation						
	i. Weekly 2 times after planting	21	17.50	88	73.33	11	9.17



	ii. Weekly after planting	80	66.60	20	16.70	20	16.70
	iii. Quarterly	10	8.30	99	82.50	11	9.20
8	Weeding and hoeing operations						
	i. 2times weekly	22	18.30	73	60.83	25	20.83
	ii. As per required	36	30.00	61	50.80	23	19.20
9	Weed control						
	i. Hand weeding	41	34.20	51	42.50	28	23.30
	ii. Herbicides	40	33.33	46	38.33	34	28.33
10	Diseases						
	a) Bacterial blight	37	30.80	67	55.80	16	13.40
	b) Fungal spots and rots	42	35.00	58	48.30	20	16.70
	Cure						
	a) Antracol	19	15.90	91	75.80	10	8.30
	b) M 45	41	34.17	59	49.17	20	16.60
11	Harvesting						
	a)3 month (Arakta)	40	33.30	46	38.40	34	28.30
	b) 6.5 month (Bhagwa, Ganesh)	46	38.30	50	41.70	24	20.00
12	Yield						
	a) 40 – 50 kg/plant	42	35.00	40	33.33	38	31.67
	b) 250 – 300 fruits /plant	46	38.40	44	36.67	30	25.00

From table.2, it was reported that 65 per cent of the respondents had partial correct knowledge, 30.80 per cent not correct and 4.20 per cent had full knowledge on traditional method of field preparation. In modern method of field preparation, 45 per cent of respondents reported partial knowledge, 37.50 per cent full correct knowledge and 17.50 per cent had no knowledge. With respect to improved variety, 36.70 per cent of respondents had no correct knowledge, 32.50 per cent had full knowledge and 30.83 per cent had partial knowledge. 45 per



cent of the respondents had full knowledge, 44.17 per cent had partial knowledge and 10.83 per cent had no knowledge on Bhagwa variety. 41.77 per cent had full knowledge on Arakta variety and equal percentage of respondents had partial and no knowledge on Jain tissue culture.

Regarding cuttings and its treatment, half of the respondents had partial knowledge, 39.20 per cent had full knowledge and 10.80 per cent had no knowledge on Carbendazim treatment. Nearly half of the respondents (45.80%) had partial knowledge, 35 per cent had full knowledge and 19.17 per cent had no knowledge on Mancozeb treatment. In respect to planting time, more than half of the respondents (51.67%) had partial knowledge, 25 per cent had no knowledge and 23.33 per cent had full knowledge on December – January. Nearly half of the respondents (49.17%) had partial knowledge, 41.70 per cent had full knowledge and 9.17 per cent had no knowledge on January-February planting time. In may-june planting,

Meanwhile, 45.83 per cent had partial knowledge, 32.50 per cent had full knowledge and 21.67 per cent had no knowledge on spacing of planting. Half of the respondents (50.83%) had partial knowledge, 32.50 per cent had full knowledge and 16.67 per cent had no knowledge on fertilizers as 625:250:250 g NPK per plant/ha. Whereas, 52.50 per cent, 41.70 per cent and 5.80 per cent of the respondents had full knowledge, partial knowledge and no knowledge on 40 kg per plant FYM as fertilizer. Nearly two-third of the respondents (73.33%) had partial knowledge, 17.50 per cent had full knowledge and 9.17 per cent had no knowledge on irrigation on weekly 2 times after planting. Regarding, weekly irrigation after planting, 66.60 per cent, 16.70 per cent and 16.70 per cent had full, partial and no knowledge. 82.50 per cent, 9.20 per cent and 8.30 per cent of respondents had partial, no and full knowledge on quarterly irrigation.

With respect to weeding and hoeing operations, 60.83 per cent of respondents had partial knowledge, 20.83 per cent had no knowledge and 18.30 per cent had full knowledge on 2 times weekly weeding and hoeing operations. Half of the respondents (50.83%) had partial knowledge, 30 per cent had full and 19.20 per cent had no knowledge on weeding as per required. In regarding, weed control, 42.50 per cent, 34.20 per cent, 23.30 per cent had partial, full and no



knowledge on hand weeding method of weed control. 38.33 per cent, 33.33 per cent and 28.33 per cent had partial, full and no knowledge on herbicides method of weed control. More than half of the respondents (55.80%) had partial knowledge on bacterial blight disease, 30.80 per cent and 13.40 per cent had full and no knowledge on bacterial blight disease.

Simultaneously, nearly half of the respondents (48.30%) had partial knowledge, 35 per cent had full knowledge and 16.70 per cent had no knowledge on fungal spots and rots. Three-fourth of the respondents (75.80%) had partial knowledge, 15.90 per cent had full knowledge and 8.30 per cent had no knowledge on Antracol method of disease control. Nearly half of the respondents (49.17%) had partial knowledge, 34.17 per cent had full knowledge and 16.60 per cent had no knowledge on M-45 method of disease cure. Whereas, 38.40, 33.30, 28.30 per cent had partial, full and no knowledge on harvesting of Arakta in 3 months.

Eventually, 41.70 per cent, 38.30 per cent and 20 per cent had partial, full and no knowledge on harvesting of Bhagwa and Ganesh in 6.5 months. Yield of 40-50 kg/plant was obtained was known by 33.33 per cent in partial, 35 per cent were known and only 31.67 per cent had no knowledge. 38.40 per cent of respondents were obtained a yield of 250-300 fruits per plant had full knowledge, 36.67 per cent had partial knowledge and 225 per cent had no knowledge on yield.

Table.3. Distribution of respondents according to their towards Pomegranate cultivation technologies.

(n=120)

S. No.	Knowledge ad attitude	Frequency	Per cent
1	Low	31	25.83
2	Medium	45	37.50
3	High	44	36.67



From table.3, it can be inferred that most of the pomegranate growers had medium level of knowledge and attitude (37.50%) about recommended pomegranate cultivation technology by the pomegranate growers, followed by high (36.67%) and low (25.83%) level of knowledge and attitude.

The relationship between socio-economic profile and knowledge level of pomegranate growers was studied and the results were presented in table.4

Table.4. Relationship between socio-economic profile and knowledge level of respondents

S. No.	Variables	'r' value	Regression Co – efficient	Standard error	't' value
X ₁	Age	-.261**	.784	1.182	.663
X ₂	Educational status	-0.086	-.119	.130	-.913
X ₃	Occupational status	-0.254**	-.074	.705	-.104
X ₄	Family size	-0.038	2.357	2.216	1.063
X ₅	Annual income	-0.298**	-.063	.073	-.859
X ₆	Land holding	0.245*	-.261	1.003	-.260
X ₇	Number of trainings attended	0.259**	-.141	1.165	-.121
X ₈	Mass media exposure	0.258**	.949	1.050	.904
X ₉	Social participation	0.389**	.152**	.057	2.646**
X ₁₀	Extension contact	0.217*	-.217	.197	-1.101
X ₁₁	Innovativeness	0.260**	.027	.177	.152
X ₁₂	Progressiveness	0.073*	-.262	.392	-.669

R² value = 0.371

F = 2.918

a = 23.735

* = Significant at 5 % level



** = Significant at 1 % level

NS = Non – significant

From table.4, it can be observed that socio-economic characteristics like age, occupation and annual income had negative and significant association with the knowledge level of pomegranate growers at 1 per cent level of significance. Meanwhile, number of trainings attended, mass media exposure, social participation and innovativeness had positive and significant association with the knowledge level of respondents at 1 per cent level of significance. Whereas, extension contact, progressiveness and land holding had positive and significant association with knowledge level of the respondents at 5 per cent level of significance. Meanwhile, educational status and family size of pomegranate growers had negative and non-significant association with the knowledge level of the respondents.

CONCLUSION

Most of the pomegranate growers were middle aged, had medium level of annual income, educated upto intermediate level of education, land holding size of more than 5 acres, medium level of mass media exposure, extension contact, high level source of information, social participation, medium level of progressiveness and innovativeness. Meanwhile, most of them had medium level of knowledge and attitude about recommended pomegranate cultivation technology by the pomegranate growers. The socio-economic characteristics like age, occupation, annual income, land holding, number of trainings attended, mass media exposure, social participation, extension contact, innovativeness and progressiveness had significant association with the knowledge level of the respondents. Whereas, educational status, family size had non-significant association with the knowledge level of the pomegranate growers. The pomegranates growers should be registered with the horticulture/agriculture department of the concerned states to ensure traceability from farm level to the consumer end. Awareness



generation on harvesting and post harvest management with due attention on mechanized harvesting, sorting, grading, precooling, waxing, packaging, palletisation etc. The export consignments for Europe require proper palletisation and fumigation. The pomegranates are required to be packed in trays and usage of paper cuttings to be discouraged.

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Correspondence:

Miss. Shinde Rohini Sharad.

Department of Agricultural Extension & Communication,

Naini Agriculture Institute,

Sam Higginbottom University Of Agriculture,

Technology & Sciences, Prayagraj, (U.P.)

Email: rohiniraut0909@gmail.com