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Constraints faced by the pomegranate grower and obtain their suggestions in adoption of pomegranate production technology

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Abstract
The present study was conducted with specific objective to study the Knowledge and adoption of pomegranate production technology in Aurangabad district. 02 tehsils and four villages from each tehsil were selected purposively. Fifteen farmers from eight villages were selected to comprise a sample of 120 respondents.

It was noticed majority of the respondents faces the constraints like lack of knowledge about identification of insect and pest was the main constraint in the adoption of pomegranate production technologies which was reported by 93.33 percent respondents, another major problem was lack of availability water and lack of knowledge about scientific plant protection reported by 91.67 and 90.00 percent respondents respectively. The other major constraints were the lack of knowledge about grafting/and seedling treatment (85.8 3%), FYM / compost preparation are difficult due to the less number of animal reported by (81.67%). It was observed that majority of the respondents suggested to provide the information about identification of insect & pests of pomegranate crop and their proper control measures (74.17%), Permanent water resources should be available i.e. farm pond (71.67%), Seedlings or grafts should be available in time with reasonable price (65.00%) and Providing knowledge of improved varieties, plant protection measures and pruning practices (64.17%).

Keywords: Pomegranate grower, obtain, adoption, pomegranate production technology

Introduction
Pomegranate (*Punica granatum* L.) belongs to the family punicaceae, having 2n=16 number of chromosome. Pomegranate (*Punica granatum* L.), an ancient and commercially important fruit of both tropical and subtropical countries, belongs to the smallest botanical family punicae. Pomegranate is native of Iran, where it was first cultivated in about 2000 BC, but spread to the Mediterranean countries at an early date. It is extensively cultivated in Spain, Morocco and other countries around the Mediterranean, Egypt, Iran, Afghanistan, Arabia and Baluchistan. In India pomegranate is extensively grown in Maharashtra, Karnataka, Andhra Pradesh, Gujarat and it picking up fast in Himachal Pradesh, Rajasthan and Madhya Pradesh. The total area under pomegranate in India is 1.27 lakh ha out of which 90,000 ha is in Maharashtra. The total production in India is 822.80 thousand MT. and production of Maharashtra is 477 MT. Export of pomegranate has increased from 18.21 thousand MT (Rs. 710 million) in 2010-2011 to 31.33 thousand MT (Rs.2985.00 million) in 2013-2014.

Methodology
The present Study was conducted in Aurangabad district of Marathwada region in Maharashtra state. Out of nine talukas of Aurangabad district Aurangabad and Phulambri tahsils have been purposively selected because there tehsil constituted maximum area under pomegranate cultivation. Four villages from each talukas were selected purposively. From each village fifteen pomegranate growers were selected purposively. Thus a total of 120 respondents were selected as sample respondents for this study.

The respondents were personally interviewed with interview schedule. The data were tabulated and analyzed by using statistical tools like frequency, percentage and correlation coefficient.

Results

Table 1: Constraints faced by the respondents in adoption of pomegranate production technologies

(N=120)

Sr. No.	Constraints	Frequency	Percentage
A	**Land and Preparatory tillage**		
1	Lack of knowledge about land requirement.	25	20.83
2	Unavailability of implements for preparatory tillage operation	05	04.17
3	Non availability of bullocks pair	10	08.33
4	High cost of preparatory tillage.	56	46.67
5	Unavailability of sources and labour in proper time	73	60.83
B	**Selection of variety and planting**		
1	Lack of knowledge about recommended verities	76	63.33
2	Non availability of recommended pomegranate grafts/seeding at proper time.	42	35.00
3	Cost of cost of seedling are high	68	56.67
4	Lack of knowledge about proper planting time	31	25.83
5	Lack of knowledge about scientific method of planting.	33	27.50
6	Unavailability of implements required for planting.	10	8.33
C	**Graft/seedling treatment**		
1	Lack of knowledge about seedling treatment	103	85.83
2	Unavailability chemicals required for seedling treatment	32	26.67
3	Use of chemicals are hazardous to health	68	56.67
D	**Use of fertilizer**		
1	Lack of knowledge about the proper NPK does.	72	60.00
2	Unavailability fertilizers at proper time	30	25.00
3	High cost of chemical fertilizers	43	35.83
4	Decreasing soil fertility due to the use of chemical fertilizers	69	57.50
5	High cost of soluble fertilizers	75	62.50
E	**Application of FYM**		
1	Lack of knowledge about scientific method of FYM / Compost preparation	91	75.83
2	FYM / Compost preparation are difficult due to the less number of animal	98	81.67
3	Good quality FYM is not available in market	72	60.00
4	Buying of FYM / Compost are more expensive	80	66.67
F	**Weed management**		
1	Lack of knowledge about proper weed control	82	68.33
2	Lack of knowledge about proper time for weed control	51	42.50
3	Lack of knowledge about scientifically application of weedicide	43	35.83
4	Lack of knowledge about Proper time of application of weedicide	59	49.17
G	**Intercultural operation**		
1	Lack of knowledge about intercultural operation	52	43.33
2	Lack of knowledge about benefits of intercultural operations	32	26.67
3	Non availability of implements required for intercultural operations	18	15.00
4	Intercultural operations are more expensive	39	32.50
5	Lack of knowledge about proper weedicide	68	56.67
6	Lack of knowledge about proper time and method of weedicide application	41	34.17
H	**Irrigation management**		
1	Lack of availability water	110	91.67
2	Lack of knowledge about Proper method of irrigation	61	50.83
3	Lack of knowledge about drip irrigation	63	52.50
4	Lack of training about management of drip irrigation	68	56.67
5	High cost of drip irrigation sets	36	30.00
6	Repairing of drip irrigation is expensive	42	35.00
7	Unavailability of proper subsidy on drip irrigation	23	19.17
8	Lack of knowledge about Proper method of fertigation	80	66.67
I	**Plant protection**		
1	Lack of knowledge about scientific plant protection	108	90.00
2	Important plant protection chemicals are not afforded	51	42.50
3	Non availability of plant protection chemicals in proper time	45	37.50
4	Lack of knowledge about identification of insect and pest	112	93.33
J	**Other**		
1	Lack of technical knowledge	74	61.67
2	Inadequate supply of electricity	74	61.67
3	Unavailability proper prices in market	78	65.00
4	Transportation cost are high	71	59.17
5	Lack of proper guidance from related extension department	64	53.33
6	Lack of labour supply	83	69.17

It was noticed from above table that majority of the respondents faces the constraints like lack of knowledge about identification of insect and pest was the main constraint in the adoption of pomegranate production technologies which was reported by 93.33 percent respondents, another major problem was lack of availability water and lack of knowledge about scientific plant protection reported by 91.67 and 90.00 percent respondents respectively.

The other major constraints were the lack of knowledge about grafting/and seedling treatment (85.8 3%), FYM / compost preparation are difficult due to the less number of animal reported by (81.67%), lack of knowledge about scientific

method of FYM / compost preparation (75.83%), lack of labour supply(69.17%), lack of knowledge about proper weed control (68.33%), buying of FYM / compost are more expensive and lack of knowledge about proper method of fertigation (66.67%), unavailability proper prices in market (65.00%), lack of knowledge about recommended varieties (63.33%), high cost of soluble fertilizers (62.50%), lack of technical knowledge and inadequate supply of electricity (61.67%), unavailability of sources and labour in proper time. (60.83%), lack of knowledge about the proper NPK does and good quality FYM is not available in market (60.00%) of the respondents.

It was also observed that the constraints faced by respondents are transportation costs are high (59.17%), decreasing soil fertility due to the use of chemical fertilizers (57.50%). The constraints like cost of seedling are high, use of chemicals are hazardous to health, lack of knowledge about proper weedicide and lack of training about management of drip irrigation faced 56.67 percent of the respondents. The other constraints like lack of knowledge about drip irrigation (52.50%), lack of knowledge about proper method of irrigation (50.83%), lack of knowledge about proper time of application of weedicide (49.17%), high cost of preparatory tillage (46.67%), lack of knowledge about intercultural operation (43.33%), lack of knowledge about proper time for weed control and important plant protection chemicals are not afforded (42.50%), non-availability of plant protection chemicals in proper time (37.50%), high cost of chemical fertilizers and lack of knowledge about scientifically application of weedicide (35.83%), non-availability of recommended pomegranate seedlings at proper time and repairing of drip irrigation is expensive (35.00%), lack of knowledge about proper time and method of weedicide application (34.17%), intercultural operations are more expensive (32.50%), high cost of drip irrigation sets (30.00%) was faced by the respondents.

The small number of respondents faces the constraints like lack of knowledge about scientific method of planting (27.50%), unavailability chemicals required for seedling/grafting treatment and lack of knowledge about benefits of intercultural operations (26.67%), lack of knowledge about proper planting time (25.83%), unavailability fertilizers at proper time (25.00%), lack of knowledge about land requirement (20.83%), unavailability of proper subsidy on drip irrigation (19.17%), non-availability of implements required for intercultural operations (15.00%), non-availability of bullocks pair and unavailability of implements required for planting (08.33%), unavailability of implements for preparatory tillage operation (04.17%).

Obtained Suggestions from respondents

Table 2: Distribution of the respondents on the basis of obtained suggestions for improving pomegranate production technologies

(N=120)

Sr. No.	Suggestion	Frequency	Percentage
1	Provide the information about identification of insect & pests of pomegranate crop and their proper control measures	89	74.17
2	Permanent water resources should be available i.e. farm pond	86	71.67
3	Seedlings or grafts should be available in time with reasonable price.	78	65.00
4	Providing knowledge of improved varieties, plant protection measures and pruning practices.	77	64.17
5	Co-operative organization should be established for market.	71	59.17
6	Timely supply of electricity should be available	64	53.33
7	Extending limit of crop insurance for pomegranate orchid.	52	43.33
8	Develop the implements / technologies which helps to minimizes labour requirement	31	25.83
9	Provide the information about scientific method of application of liquid / soluble fertilizers	24	20.00
10	Provide the information about drip irrigation	21	17.50
11	Provide the information about hazardous of chemicals	19	15.83
12	Provide the information about new innovation in proper time from extension department	18	15.00
13	Disease resistant varieties of pomegranate should be made available.	11	09.10

It was observed from above table that majority of the respondents suggested to provide the information about identification of insect & pests of pomegranate crop and their proper control measures (74.17%), Permanent water resources should be available i.e. farm pond (71.67%), Seedlings or grafts should be available in time with reasonable price (65.00%) and Providing knowledge of improved varieties, plant protection measures and pruning practices (64.17%). Whereas, Co-operative organization should be established for market 59.17 percent and 53.33 percent of the respondents suggested provide the information about timely supply of electricity should be available time.

It is further reported that, 43.33 percent of the respondents Extending limit of crop insurance for pomegranate orchid While, 25.83 percent of the respondents suggested develop the implements / technologies which helps to minimizes labour requirement.

It was also showed that 20.00 percent of the respondents suggested that provide the information about scientific method of application of liquid / soluble fertilizers, 17.50 percent of the respondents suggested that Provide the information about drip irrigation, 15.83 percent of the respondents suggested that to provide the information about hazardous of chemicals.

The very less number of the respondents suggested that to provide the information about new innovations in proper time from extension department (15.00%) and provide the information about Disease resistant varieties of pomegranate should be made available (09.10%).

Conclusions

It was noticed that more than seventy percent of the respondents faces the constraints like lack of knowledge about identification of insect and pest was the main constraint in the adoption of pomegranate production technologies which was reported by 93.33 percent respondents, another major problem was lack of availability water and lack of knowledge about scientific plant protection reported by 91.67 and 90.00 percent

respondents respectively. The other major constraints were the lack of knowledge about grafting/and seedling treatment (85.8 3%), FYM / compost preparation are difficult due to the less number of animal reported by (81.67%), lack of knowledge about scientific method of FYM / compost preparation (75.83%).

It was also observed that majority of the respondents suggested to provide the information about identification of insect & pests of pomegranate crop and their proper control measures (74.17%), Permanent water resources should be available i.e. farm pond (71.67%), to Seedlings or grafts should be available in time with reasonable price (65.00%) and Providing knowledge of improved varieties, plant protection measures and pruning practices (64.17%). Whereas, Co-operative organization should be established for market 59.17 percent and 53.33 percent of the respondents suggested provide the information about timely supply of electricity should be available time.

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