

## TECHNOLOGICAL GAP IN ADOPTION OF POMEGRANATE CULTIVATION PRACTICES BY THE POMEGRANATE GROWERS

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### ABSTRACT

India is one of the largest producers of pomegranate in the world. Maharashtra is the leading state in India other important states are Karnataka, Andhra Pradesh and Gujarat. The area under pomegranate cultivation is increasing rapidly in Gujarat and especially in Banaskantha district. It was 210 ha in 2005-06 which was increased to 10951 ha in 2018-19. At present pomegranate cultivation in the district is at cross road. It is observed that because of some constrains, farmers are not realizing the potential yield and quality because of the gap in the adaption of recommended technologies. This paper summarizes the present cultivation practices followed by the farmers and prevailing gap in technologies like Processing and Value Addition, Integrated Disease Management, Harvesting, Sorting, Grading, Packaging and Storage and Integrated Pest Management etc, and provides suggestions for needed research and promotion of policies to reduce the technological gap in the cultivation of better quality pomegranates.

**Keywords:** pomegranate growers, adoption, technological gap

### INTRODUCTION

Pomegranate is an important fruit crop of arid and semiarid regions of the world. It is believed to be originated from Iran. It has both cultivated (*Punica granatum* L.) and wild types (*Punica protopunica*). The cultivated types are adapted to the Mediterranean regions of Central Asia, Africa and Europe. Pomegranate is also popular in South East Asian countries.

India is one of the largest producers of pomegranate in the world. During 2014-15, pomegranate was cultivated over 1.81 lakh ha with an annual production of 17.89 lakh tonnes and productivity of 9.88 tonnes/ha in India. At present, Maharashtra is the leading state in acreage covering about 68.7 per cent of the area under pomegranate. Similarly, around 70.2 per cent of total production comes from Maharashtra. It is proposed that by the year 2025, the area under pomegranate is projected to increase to 1.20 lakh ha from 7.0 lakh ha at present. The other important states next to Maharashtra with respect to pomegranate cultivation are Karnataka, Gujarat and Andhra Pradesh. It is observed that because of some constrains, farmers are not realizing the potential yield and quality because the gap in the adaption of recommended technologies.

### OBJECTIVES

(1) To find out the technological gap in adoption of pomegranate cultivation practices by the pomegranate

growers

(2) To find out the relationship between personal, socio-economic, psychological, communicational and situational characteristics with overall technological gap of pomegranate growers in cultivation practices

### METHODOLOGY

The present investigation was carried out in Banaskantha District of Gujarat State. "Ex-post facto" research design was used for the study. Multistage Sampling method was selected for the study. The Banaskantha district was selected purposively as it has highest area under pomegranate cultivation. Among the fourteen talukas of Banaskantha District, Tharad, Lakhani and Dhanera talukas was selected purposively for the study because the area and production of these three talukas is higher than other talukas of the district. Among the selected three talukas, six villages from each taluka was selected randomly from the list of villages in which at least ten pomegranate growers was available thus the 18 villages from three talukas was selected for the study. Ten pomegranate growers from each village were selected randomly for the study thus the total number of respondents were 180. The dependent variables undertaken in this study was technological gap in adoption of pomegranate cultivation practices.

Extent of technological gap was the dependent variable in the study. A set of recommended practices of pomegranate

cultivation had been considered as base. Technological gap had been conceived as the difference between the packages of recommended practices of pomegranate cultivation and the extent of adoption of this recommended practice at farmer's level.

The technological gap for each practice was calculated by deducting score of the number of sub-practices adopted by the respondents from the total number of sub-practices adopted by the respondents.

The major and sub-practices were included in the **RESULTS AND DISCUSSION**

**Table 1 : Distribution of pomegranate growers according to their practice-wise technological gap** (n = 180)

Sr. No	Practice	Total score	Obtained score	Technological gap (%)	Rank
1	Varietal selection	540	505	06.48	<b>X</b>
2	Planting system and Pit-digging and Filling	900	737	18.11	<b>IX</b>
3	Integrated Nutrient Management	4140	2569	37.95	<b>VIII</b>
4	Water management	900	484	46.22	<b>VII</b>
5	Intercrop, Pruning and bahar treatment	1440	728	49.44	<b>V</b>
6	Integrated Pest Management	2160	1049	51.44	<b>IV</b>
7	Integrated Disease Management	3600	1476	59.00	<b>II</b>
8	Harvesting, Sorting, Grading, Packaging and Storage	900	436	51.56	<b>III</b>
9	Market and Selling	180	92	48.89	<b>VI</b>
10	Processing and Value Addition	180	20	88.88	<b>I</b>

The highest technological gap was found in case of processing and value addition (88.88 per cent). Most of the respondents do not practice the processing and value addition at farm level so naturally there is high level of technological gap.

The technological gap quite high for integrated disease management (59.00 per cent), harvesting, sorting, grading, packaging and storage (51.56 per cent), integrated pest management (51.44 per cent), intercrop, pruning and bahar treatment (49.44 per cent), market and selling (48.89 per cent) and water management (46.22 per cent) whereas, there were less technological gap was observed for the practice like planting system and pit-digging and, filling (18.11 per cent) and varietal selection (06.48 per cent) which were ranked as first to tenth, respectively.

Thus, it is concluded that a great majority of the farmers had technological gap in processing and value addition (88.88 per cent) followed by majority of them had technological gap in integrated disease management (59.00 per cent) and harvesting, sorting, grading, packaging and storage (51.44 per cent), respectively.

schedule which was administrated to the respondents. The score assigned for adopted practices was 1 and 0 for non-adoption. The per cent technological gap for each major practice and for the whole package, were worked out with help of following formula. The formula for technological gap of a particular practice of pomegranate producer expressed in percentage was:

$$\text{Technological gap} = \frac{\text{Maximum possible score} - \text{Actual score}}{\text{Maximum possible score}} \times 100$$

**Table 2 : Relationship between personal, socio-economic, psychological, communicational and situational characteristics with overall technological gap in adoption of pomegranate cultivation practices** (n=180)

Sr. No.	Independent variables	Correlation Coefficient Technological gap
X <sub>1</sub>	<b>Age</b>	-0.86**
X <sub>2</sub>	<b>Education</b>	-0.131 <sup>NS</sup>
X <sub>3</sub>	<b>Size of land holding</b>	-0.126 <sup>NS</sup>
X <sub>4</sub>	<b>Area under pomegranate</b>	-0.22**
X <sub>5</sub>	<b>Social participation</b>	0.34**
X <sub>6</sub>	<b>Annual income</b>	-0.323**
X <sub>7</sub>	<b>Risk preference</b>	-0.36**
X <sub>8</sub>	<b>Economic motivation</b>	-0.453**
X <sub>9</sub>	<b>Attitude</b>	-0.443**
X <sub>10</sub>	<b>Source of information</b>	-0.293**
X <sub>11</sub>	<b>Extension participation</b>	-0.267**
X <sub>12</sub>	<b>Cosmopolitaness</b>	-0.377**
X <sub>13</sub>	<b>Distance from market</b>	0.257**
X <sub>14</sub>	<b>Marketing channel</b>	-0.128 <sup>NS</sup>

NS= Non Significant \* = Significant at 0.05 level of significance, and \*\* = Significant at 0.01 level of significance.

It is clear from table 2 that the relationship of technological gap was observed positive and highly significant with social participation and distance from market whereas, negative and highly significant with nine independent variables viz., age, area under pomegranate, annual income, risk preference, economic motivation, attitude, source of information, extension participation and cosmopolitanism. While, the independent variables education, size of land holding and marketing channel were found negatively and not significantly correlated with technological gap. The findings are in line with the Vinaya and Tapan (2023), Prajapati et al. (2022), Chaudhari et al. (2022), Chaudhary et al. (2022), Ali et al. (2021) and Sardhara et al. (2020).

## CONCLUSION

It is concluded that a great majority of the farmers had technological gap in processing and value addition (88.88 per cent) followed by majority of them had technological gap in integrated disease management (59.00 per cent) and harvesting, sorting, grading, packaging and storage (51.44 per cent). The possible reasons for technological gap observed in various practices were due to low knowledge level of farmers and the many problems faced by them in pomegranate different cultivation practices.

## CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

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