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Technological gap in adoption of improved pomegranate cultivation practices

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Abstract

The present study was conducted in Aurangabad district of Marathwada region with a view to know the technological gap in adoption of improved pomegranate cultivation practices during the year 2021-22. Aurangabad was selected purposively as in this district considerable area under pomegranate cultivation. From the district, four talukas were selected purposively where pomegranate is extensively cultivated. Among four talukas of Aurangabad district, Three villages from each tahsil were selected, a total number of 12 villages were selected from the four tahsil. The data were collected through personal interview schedule. An Ex-post-facto research design was followed. The collected data was analyzed, classified and tabulated. Statistical tools such as frequency, percentage, mean, standard deviation were used to interpret findings and draw conclusions. It was observed that 77.50 Percent of pomegranate cultivators were having medium overall technological gap and technological gap in respect land preparatory tillage was 22.29 percent, use of fertilizer and manures application was 26.58 percent, weed management was 21.66, bahar treatment was 30.83 percent, disease management was 25.00 percent, insect pest management was 68.56 percent, fruit disorder was 26.66 percent and packaging and transportation of the fruits was 30.00 percent.

Keywords: Technological gap, adoption, improved pomegranate cultivation

Introduction

Pomegranate (*Punica granatum* L.) is an important fruit of tropical and subtropical regions of World. It commonly known as Anar, Dalib, Matulum. The centre of origin of pomegranate is Iran where it was first cultivated in 2000 B.C. It is extensively cultivated in various countries which includes Spain, Morocco, Egypt, Iran, China, Japan, USA, Russia, Pakistan, India and other Mediterranean countries. Pomegranate occupies 18th placed based on production among the world's main fruit crops.

India is world's largest producer of pomegranates and it produces finest quality pomegranate throughout the year. The total area under pomegranate crop in India 2018-19 is approximately 2.46 lack hectare and production is 28.65 lack metric tons. During the year 2018-19, 67.89 thousand MT fruits exported from India and it worth Rs. 6885 million, which shows that there is tremendous potential in fruit export (Anonymous, 2019) [2]. UAE, Nepal, Saudi Arab, Oman, Qatar, Netherland, Kuwait, Baharin, Srilanka, Egypt, Vietnam, Singapore are the major destinations were pomegranates exported from India.

Maharashtra contributes 64.43% in total production of pomegranates from India and it ranks first in total production followed by Karnataka, Gujrat, Andhra Pradesh, Madhya Pradesh etc. It is an important fruit crop of Maharashtra and it is cultivated in 43,151 ha. Area with total production of 4,31,510 tones. In Maharashtra, production is mainly concentrated in the Western Maharashtra region and the Marathwada region. Commercial cultivation of pomegranate takes place in Solapur, Nashik, Ahmednagar, Pune, Dhule, Aurangabad, Satara, Osmanabad and Latur districts of Maharashtra. The varieties like Bhagwa, Super Bhagwa, Arakta, Ganesh, Mrudula, Dholka popularly grown in Maharashtra.

In Marathwada, pomegranate is commercially cultivated in Aurangabad, Beed, Jalna, Osmanabad and Latur districts. Jalna and Aurangabad are the major pomegranate growing districts in which area under pomegranate cultivation in jalna is 2,424 ha and overall production is about 19,100 tonnes. While area under pomegranate cultivation in Aurangabad is 7,300 ha and production is 31,800 tonnes. (Anonymous, 2018) [1].

Bhagawa the variety of pomegranate growing in major districts of Marathwada. The fruit is glossy red in colour with soft seeds and high T.S.S. Variety Ganesh is also grown having yellow to reddish yellow rind colour, having light pink arils and soft seeds.

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Fruit weights between 225-250 gms with medium T.S.S Agricultural scientist 'Dr. Cheema' did the pioneering work in 1944 at Ganeshkhind, Pune selecting elite plants collected from Alandi and Dholka, cross breed of which gave rise to GBI-1, latter on renamed as 'Ganesh' as a chance seedling (Patil and Karale, 1987).

Pomegranate contains calcium, phosphorous, iron and other mineral as well as 'B' and 'C' vitamins. It prefers for its cool, refreshing juice and also for its different medicinal properties. Bark and rind of fruit are commonly used in the therapeutics in dysentery and diarrhea. Juice is used as medicine for leprosy. With this background this study was undertaken with objective to know the extent of technological gap in adoption of improved pomegranate cultivation practices.

Methodology

The present study was conducted in the Aurangabad district of Marathwada region of Maharashtra state during 2021-2022. The Tahsil namely Aurangabad, Paithan, Phulambri, Kannad were selected purposively as pomegranate growers were comparatively more in this area. The villages were selected purposively from Aurangabad, Paithan, Phulambri and Kannad tahsil, where maximum number of pomegranate growers observed. Three villages from each tahsil Thus, a total number of 12 villages were selected from the four tahsil. List of selected villages namely Jadgaon, Hivra and Tongaon were selected from Aurangabad taluka Tupewadi, Balanagar, Kadethan were selected from Paithan taluka Haladgaon khurd, Haladgaon budroog, Wakod from Phulabri taluka and Bahirgaon, Dongaon, Chikalthan from the Kannad district. From each village ten pomegranate growers were selected from the list provided by talathi and Agriculture Assistant of

each village. Thus, a total 120 pomegranate farmers were selected as sample respondents for the study.

The data were gathered through personal interview method with the help of pre-tested structured schedule consisting of various items concern with the objective of study. The interviews were conducted during the month of January and February 2022. On an average the interview of single respondents lasted for about 20 to 30 minutes. The interview schedules were filled in and checked on the same day. One shot case study method of Ex-post-facto research design was used for the present study. The collected data was analysed, classified and tabulated. Statistical tools such as frequency, percentage, mean, standard deviation were used to interpret findings and draw conclusions.

Results and Discussion

Extent of technological gap in adoption of improved pomegranate cultivation practices

Overall technological gap in pomegranate cultivation practices:

The extent of technological gap in pomegranate production technology were selected for the study viz, use of soil and preparatory tillage i.e land preparation, use of fertilizer and manure, weed management, bahar technique, diseases and insect pest management also the disorders, and the packaging and transportation of the fruits, composite technological gap is calculated with the help of gap index, then the pomegranate cultivators were categorized on the basis of mean \pm 1 S.D. The distribution of pomegranate cultivators according to the extent of technological gap in above selected practices of pomegranate production technology is presented in table below.

Table 1: Distribution of pomegranate cultivators according to overall technological gap.

| Sr. No. | Category | Frequency | Percentage |
|--------------|----------|-----------|------------|
| 1 | Low | 12 | 10.00 |
| 2 | Medium | 93 | 77.50 |
| 3 | High | 15 | 12.50 |
| | Total | 120 | 100.00 |
| Mean = 36.78 | | | |
| S.D = 6.31 | | | |

The data presented in table 1 reveals that 77.50 Percent of pomegranate cultivators were having medium overall technological gap followed by 12.50 percent and 10.00 percent had high and low overall technological gap in pomegranate cultivation respectively. The reasons might be that pomegranate is medium duration horticulture (fruit) crop, needs intensive concentration in cultivation practices particularly application fertilizers and chemicals; which need

consistency in gaining knowledge and its adoption. This findings are similar with the findings of the Chavan (2014), Pawar (2015) [3].

Practice wise average technological gap of recommended pomegranate cultivation practices.

Practice wise average technological gap of recommended pomegranate cultivation practices in given in table 2.

Table 2: Distribution of pomegranate cultivator according to practice wise average technological gap of recommended pomegranate cultivation practices.

| Sr. No. | Recommended Practices | Technological gap (in percentage) |
|---------|---|-----------------------------------|
| 1 | Gap in land preparation | 22.29 |
| 2 | Gap in fertilizer and manures application | 26.58 |
| 3 | Gap in weed management | 21.66 |
| 4 | Gap in bahar Techniques | 30.83 |
| 5 | Gap in disease management | 25.00 |
| 6 | Gap in insect pest management | 68.56 |
| 7 | Gap in fruit disorder | 26.66 |
| 8 | Gap in packaging and transportation | 30.00 |
| 9 | Overall technological gap (Average) | 31.45 |

The overall technological joining all of the recorded practices was noticed 31.44 percent in adoption of improved pomegranate cultivation practices. Similar findings were reported by Pawar (2015)^[5], Emsetty (2021)^[4].

Gap in land preparation

Table 2 indicated that the technological gap in respect land preparatory tillage was 22.29 percent. It means that a large majority of the pomegranate cultivators applying recommended soil and preparatory tillage operations like proper use of soil, ploughing and harrowing.

Gap in fertilizer and manures application

From table 2 indicated that the technological gap in respect of use of fertilizer and manures application was 26.58 percent. It means that there is significant technological gap in respect to recommended use of fertilizer and manures applications.

Gap in weed management

In that the table 2 indicates that technological gap in respect to weed management was 21.66, it means that a large majority of the pomegranate cultivators applying recommended weed management practices.

Gap in bahar treatment

Data presented in table 2 indicated that the technological gap in respect to bahar treatment was 30.83 percent. It means that a majority of pomegranate cultivators were following the bahar treatment in the farm for their betterment.

Gap in disease management

As respect to the data presented in the table 2 shows that the technological gap with respect to the disease management was 25 percent. It means that sufficient number of peoples follows the disease management practices to overcome the disease attack into their field.

Gap in insect pest management

Data presented in table 2 indicate that the technological gap in respect to the insect pest management was 68.56 percent. It shows that the more than half pomegranate cultivators were follows the insect pest management practices into their filed which give more profit and improve their economic condition.

Gap in fruit disorder

Data presented in table 2 indicate that the technological gap in respect to the fruit disorder was 26.66 percent. It means that a majority of pomegranate cultivators were following practice which reduces the problem of fruit disorder.

Gap in packaging and transportation

Data presented in table 2 indicate that the technological gap in respect to the packaging and transportation of the fruits was 30 percent it means less than half of people follows the packaging and transportation practices.

Summary and Conclusions

It was concluded that 77.50 Percent of pomegranate cultivators were having medium overall technological gap. Technological gap in respect land preparatory tillage was 22.29 percent, use of fertilizer and manures application was 26.58 percent, weed management was 21.66, bahar treatment was 30.83 percent, disease management was 25.00 percent,

insect pest management was 68.56 percent, fruit disorder was 26.66 percent and packaging and transportation of the fruits was 30.00 percent.

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