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A Comparative Analysis of Horticultural Crop Production in Indapur and Mulshi Talukas of Pune District, Maharashtra

Dr. Atmaram K. Phalphale[1], Prakash D. Kare[2]

[1]Associate Professor, Department of Geography, Arts Science and Commerce College,Indapur, Dist- Pune

[2]Research Student, Department of Geography, M.V.P. Samaj's K.T.H.M. College, Nashik. (Affiliated to S. P. Pune University, Pune.) M.S. India.

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Abstract

Horticulture plays a significant role in agricultural development and rural economy in India due to favorable agro-climatic conditions and increasing market demand. The present study aims to analyze and compare horticultural crop production in Indapur and Mulshi tehsils of Pune district, Maharashtra. The research is based on both primary and secondary data collected through field surveys, questionnaires, and official agricultural records. The study examines area distribution, crop concentration, and productivity patterns of selected horticultural crops such as pomegranate, banana, guava, mango, custard apple, grape, and sapota during the period 2017–18 to 2024–25. Bhatia's crop concentration method and simple productivity analysis were used to identify spatial variations in horticultural production. The results reveal that Indapur tehsil shows greater diversification and higher production of horticultural crops, particularly pomegranate, due to favorable climatic conditions and market opportunities, whereas Mulshi tehsil is dominated mainly by mango cultivation due to high rainfall and hilly terrain. The study highlights how physical geography and climatic differences influence horticultural cropping patterns and regional agricultural development.

Keywords: *Horticulture, Crop Production, Indapur Tehsil, Mulshi Tehsil, Agricultural Geography, Crop Concentration, Productivity Analysis, Pune District, Maharashtra, Horticultural Crops.*

Introduction:

In the world there are various types of regional diversity like mountains, plateau, p, etc. by the endogenetic and exogenetic processes. India has various types of topography, climate, and forest. It is part of gondvana land. Which is the part of tropical, temperate and tundra climatic regions. India is a major producer of cand food crop because of the landscape and climate. It is called as the backbone of the Indian economy. There are four biodiversity hotspots in India. Maharashtra is a part of the Deccan Plateau. These study regions under the Pune district of Maharashtra. Which is the part of Sahyadri ranges and Deccan plateau.In India, around 60 percent people are engaged in the agricultural sector. In India, horticultural crop production is very high due to export-oriented production, favorable climatic conditions, and the availability of international, national, and local markets. In Maharashtra, states are engaged in cultivation and production of various horticulture crops which are highly rich in vitamins, protein, and minerals.
In 2017–18, the total fruit crop area in Indapur tehsil was 10,409 ha and in Mulshi tehsil it was 142.2 ha. By 2024–25, the fruit crop area in Indapur tehsil declined to 8,411 ha, while it increased to 159 ha in Mulshi tehsil.

Literature of Review:

- It has been identified as a good source of nutritional security and has a great potential for generating further economic activities in terms marketing and distribution etc. (Mousumi et al., 2020).

Address for correspondence:

Dr. Atmaram K. Phalphale,*Associate Professor, Department of Geography, Arts Science and Commerce College,Indapur, Dist- Pune*

Email: *atmaramphalphale@gmail.com*

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- India is among the highest producers of fruits and vegetables, and it stands second in the world. Within India also, fruits and vegetables constitute the main crops among the horticulture crops (Kumari and Singh, 2019).
- It is observed that diversification towards horticulture provides a better alternative with higher return (Ramapa et al., 2015).
- India has the advantage of agro-climatic condition that provides a good scope for production of various horticulture crops, and due to this, horticulture is the fastest growing sector within the
- agriculture sector. This growth is further induced by changing consumer preference for high value horticulture crops (Ramapa et al., 2015).
- According to them, this sector has a great potential in higher income generation along with the employment. Further, this sector has chances of eliminating poverty, reducing hunger and malnutrition. The share of fruits and vegetables has been increasing since 1990s (Birthal et al., 2007).

Objective:

To the study of area and production of Horticultural selected crops of Indapur and Mulshi tehsil of Pune.

Data Sources and Methodology:

Data were obtained from primary and secondary sources. Primary data were collected through questionnaires using individual interview methods. For the detailed study of fruit farming in the study region, secondary and primary data were collected on land use, cropping pattern, area under fruit crops, and employed population. The data were obtained through structured schedules and individual interview methods. Ten per cent of the total fruit cultivators in Indapur and Mulshi tehsils were selected for the interview. The obtained data were systematically processed and presented in tabular form to enhance clarity in analysis and interpretation.

Two methods were used for this study: **Bhatia's crop concentration method was applied to show the** horticulture crop concentration, and another simple productivity method was used for demarcate the high, moderate and low productivity areas in the study area tehsil.

Study Region:

Indapur tehsil is situated in the Bhima river basin. It is located in the south-eastern part of Pune district, Maharashtra. Indapur tehsil is located in the Pune district of Maharashtra, India. The physiography of Indapur tehsil is influenced by its geographic location within the Deccan Plateau, which is characterized by a variety of landforms. Here's a breakdown of the key aspects of the physiography of Indapur tehsil. Indapur lies in the Deccan Plateau, which is generally flat to slightly undulating. It is included in rain shadow zone.

The study region is part of the larger peninsular plateau of India and is known for its broad, elevated land. The tehsil's elevation generally ranges between 450 meters to 600 meters above sea level, which is typical of the plateau region. The region is marked by gentle slopes, which are conducive to agriculture. There are few steep hills or mountainous areas in this part of the plateau. In research area, conditions are favorable for Horticultural crop like pomegranate, banana, guava, mango, custard apple etc. Indapur's climate, with its hot summers and mild winters, is perfect for cultivating pomegranates. The dry conditions in the region are ideal for the fruit, promoting healthy growth and enhancing its quality.

Location map

Mulshi tehsil, situated to the west of Pune in Maharashtra, is a scenic, hilly region with a high rainfall area in the Sahyadri ranges known for the significant Mulshi dam on the Mula River. It serves as a major eco-tourism hub, and is rapidly developing with industrialization and IT parks. The area covers 147 villages and has a population of

approximately 171,006 (2011 Census). The total geographical area is approximately 1029 km^2/ 103953 hectares. In the area of study, average rainfall is 1688.7mm. The economy of the study region traditionally depended on agriculture (with rice as the major crop) and has now shifted towards the tourism sector, as well as real estate, IT, and industrial development.

Area of Selected Horticultural Crop:

In these two-tehsil comparative analysis of selected horticultural crops is as follows; Table No. 1. Area Under Selected Horticultural Crop in Indapur Tehsil

Area Under Selected Horticultural Crop in Indapur Tehsil									
							Area In '000 Ha		
	Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Sr.No	**Selected Crop**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**
1	Guava	52	101	356	477	896	1310	2450	1055
2	Banana	187	374	581	769	1028	2245	1010	1300
3	Pomegranate	4138	6232	8490	8223	6023	1949.8	2735	3200
4	Custard Apple	48	46	326	329	518	530	714	1100
5	Sapota	132	134	69	69	60	55	53	16
6	Grape	730	685	2506	2491	2407	2245	2120	1300
7	Mango	183	193	138	175	287	303.4	260	250

Source: Agricultural Office, Pune District

Table. No. 2 Area Under Selected Horticultural Crop in Mulshi Tehsil

Area Under Selected Horticultural Crop in Mulshi Tehsil									
							Area In '000 Ha		
	Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Sr.No	**Selected Crop**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**	**Area**
1	Guava	7.2	7.2	7.2	8	8	7.2	7	7
2	Banana	0	0	0	0	0	0	0	0
3	Pomegranate	0	0	0	0	0	0	0	0
4	Custard Apple	2.1	2.1	2.1	2	2	2.2	2	2
5	Sapota	0	0	0	2	2	2	2	2
6	Grape	0	0	0	0	0	0	0	0
7	Mango	132.9	132.9	132.9	140	140	141.5	144	148

Source: Agricultural Office, Pune District

Result and Conclusion:

The growth rate of Pomegranate fruit was higher in the given period of time in Indapur tehsil. In Indapur tehsil, there is a greater variety of horticultural fruit crops compared to Mulshi tehsil, where only three to four fruit crops are observed. In Indapur tehsil, pomegranate is highly produced because of favorable topography and climate, high profitability, availability of local markets, export potential, and labour- intensive farming. In 2022-23 area of Pomegranate cultivation declined because of the diseases like such as sun burning, Oily spots (telya), marya etc. and fertilizers are very costly. Area of Sapota is declining from 2018-19 to 2024-25 because of Custard apple and Pomegranate area is increased. Indapur tehsil lies under the rain shadow zone, which is the favorable for horticultural crops.

In Mulshi taluka, mango, custard apple and Guava crops are observed. Among these, mangoes show a high growth rate, increasing from 132.9 ha to 148 ha.

In Mulshi tehsil, the major fruit crop is mango, followed by Guava and custard apple.

In the study regions, one part lies in the Deccan Plateau, and another is Sahyadri ranges. One region lies under the rain shadow zone while the other is a high rainfall area. Thus, the horticultural cropping patterns of these research areas are different.

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Conflicts of interest
The authors declare that there are no conflicts of interest regarding the publication of this paper

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