



REGIONAL DISPARITIES OF FRUIT FARMING IN SOLAPUR DISTRICT OF MAHARASHTRA: A GEOGRAPHICAL ANALYSIS

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Abstract- Fruits are nature's gift of mankind. The standard of living of the people can be judged by production and consumption of fruits per capita. Cultivation of fruits contribution to the health, happiness and prosperity of the people. The fruits production was confined to the pleasure garden of king and nobles. Fruit cultivation is labour intensive industry and it is ideally helpful in drought more area where employment opportunities is very rare. The economic productivity of the fruit plants per unit area is no less than any of the agriculture crops. In spite of the fact that Solapur district is climatically favorable of a Variety of tropical, subtropical and temperate fruits. Hence in present paper an attempt has been made to assess the regional disparities in level of fruit farming in study region.

Keywords- prime position, dynamic region, hi-tech, ATS, FWS, FS, SSFD, HDP, INM, MIS, PM, PC,PS

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Introduction

Horticulture was the first culture that man had invested in the human economic history. It has been developed much before the art of cultivating the agriculture for human survival. Modern Horticulture may be defined as an agricultural science which treats production, cultivation and improvement of fruits, vegetable and ornamental plants. Fruits occupy prime position not only in human diet and nutrition but in the economy of as well because plantation of fruit crops much more remunerative than cereals and pulses cultivation. Solapur District is located in drought prone area of Maharashtra which is basically agriculturally and rural. However, agriculture of this area, despite limited irrigation facilities, low rainfall, poor and low quality of soil and high density of population has given way to variety of cropping pattern to adjust with prevailing natural conditions. Moreover, farmers of the region have adapted to fruit farming as a best possible alternative cropping pattern.

Objectives

The present papers aim to find out regional variation in fruit farming and to evaluate the determents of fruit farming at micro level.

Database and methodology

Tahasilwise secondary data of fruit farming are used for present-study. It is collected from District Horticulture Dept. of Solapur and District wise Statistical Information of Maharashtra state.

To know the level of fruit farming development Kendal's Ranking Co-efficient method is used.

The statistical and cartographic techquines are used fro representation of co-efficient index.

The following formula has been adapted for calculating the level of fruit farming.

$$RCI = \frac{\sum r}{n}$$

Where

RCI - Ranking co-efficient index

$\sum r$ - sum of rank

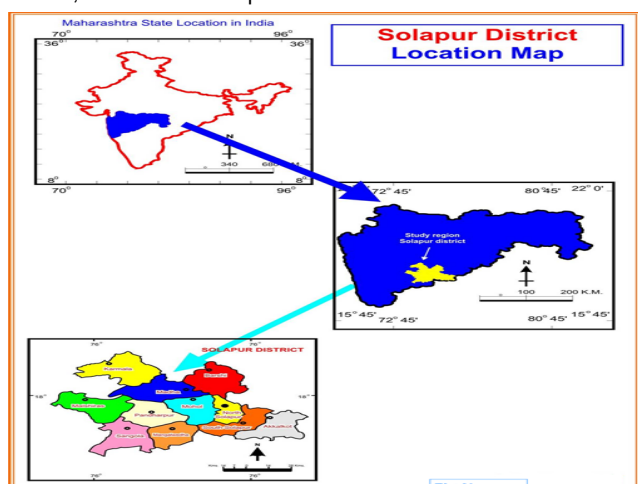
n - Number of variables

Kendal's Ranking co-efficient index is calculated for each tahsil of Solapur District given in Table No 1. The table shows the ranks for each taluka for all fruit crops as per its value. The twelve fruit crops ranking of the tahsil done as shown in table. Afterward ranking co-

efficient index is calculated by above formulas for each tahsil. There is regional variation in co-efficient index of various tahsil of district. The ranking co-efficient index is classified and interpretation gives the proper result.

Study Area

The present study deals with the geographical perspectives of the agriculture in Solapur district. The Solapur district is bounded by 17°05' North latitudes to 18° 32' North latitudes and 74°42' east to 76°15' East longitudes. The total geographical area of Solapur district is 14895 K.m². divided into eleven tahsils. Climate of the district is dry. The daily mean maximum temperature range between 30° C to 35° C and minimum temperature range between 18°C to 21°C. The highest temperature is 47° C recorded in the month of May. The average annual rainfall is registered 510 mm. The soil of the district essentially derived from the Deccan trap. The soil of the district can broadly classify into three groups shallow, medium and deep soil.



Explanation- Using the Kendal's ranking co-efficient Index the fruit farming regions are delimited as shown in figure. With help of ranking co-efficient index Solapur District can be classified into four regions.

Table 1-

Solapur District Ranking Co-efficient Index value of Fruit Farming														
Tahsil	Pomegranate	Ber	Grape	Mango	Lime	Chikku	Coconut	Chich	Guava	sweet lime	C.Apple	Banana	Σ r	Co-efficient Index
N. Solapur	8	9	3	11	9	11	11	4	8	10	4	11	99	8.25
Barshi	7	2	2	2	4	4	9	1	2	1	1	9	43	3.58
Akkalkot	11	5	7	1	2	10	7	3	5	8	11	10	80	6.67
S. Solapur	10	11	4	5	5	9	8	6	10	7	7	1	83	6.91
Mohol	4	4	5	10	1	8	5	8	6	6	5	6	68	5.67
Mangalwedha	3	7	11	7	8	5	10	11	7	11	10	3	84	7.7
Pandharpur	2	6	1	6	10	2	3	9	9	5	9	5	93	5.58
Sangola	1	3	8	9	11	1	6	10	11	9	8	7	67	7
Malshiras	6	8	6	8	7	3	2	7	4	4	6	2	84	5.25
Karmala	9	10	9	3	6	6	1	5	1	2	3	8	63	5.25
Madha	5	1	10	4	3	7	4	2	3	3	2	4	48	4

Source :- Compiled by Author

Dynamic Fruit Farming Region- The co-efficient index value is below 4.5 that region known as dynamic fruit farming region. The

only tahsils (18.18 of district) come under this region and this region includes Barshi and Madha tahsils. Barshi is the first dynamic tahsil of district and its co-efficient index value is 3.58. In Barshi tahsil sweet lime, c. apple, chinch, are largely cultivated and ber, grape and mango are also dense cultivated in this tahsil. The average rainfall is more than 650 mm and Bhogawati River available for irrigation, fertile soil responsible for fruit farming. Madha is second dynamic region with index value 4.00 in Solapur District. Ber, chinch, apple, are tremendously practiced and Banana, limestone, mango, guava, coconut etc. are highly cultivated because Sina River and canals provides water.

Active Fruit Farming Region- Active fruit farming region means a region with having ranking co-efficient 4.5 to 6.0. Majority 36.36 percent area of district passes through this stage of fruit farming development of in the district. Pandharpur, Malshiras, Karmala and Mohol are progressive tahsil in district. Higher development in various fruit crops during short duration is the especially of active region. Pomegranate, Grape, Banana, chikku, sweet lime, coconut, Mango are largely cultivated in these tahsil. The Bhima River flows in this area which largely provide water for irrigation. The Ujani canal and Nira right and left bank canal also provide large water irrigation. The highly specific crops suitable soil is situated in this region.

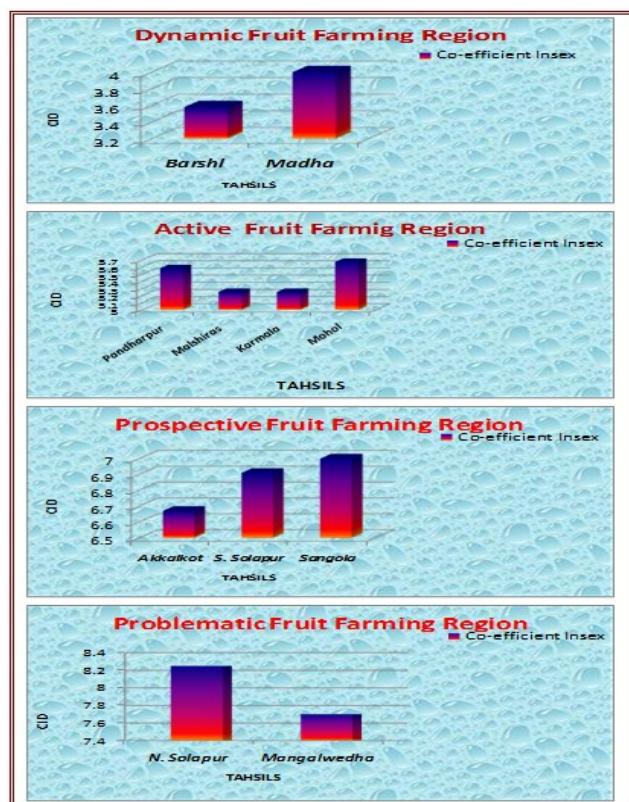


Fig. 2-

Prospective Fruit Farming Region- Prospective region is those with high fruit farming potentials but lower development of fruit farming due to large barren land, potential land, unfertile soil and lack of irrigation facilities. Those tahsils of Solapur tahsils with ranking coefficient index between 4.5 to 6.0. Such tahsils are included

as a prospective fruit farming region. In Solapur tahsil three tahsils are included in this i.e. Akkalkot, South Solapur and Sangola are the tahsils with great prospectus for future fruit farming. This region having great future for future development of fruit farming. If in Sangola tahsil the irrigation facilities will be available, the areas of fruit farming can tremendously increasing.

Problematic fruit farming region- The problematic fruit farming region means those regions co-efficient index value is high (above 7.5). North Solapur and Mangalweda are the problematic fruit farming region in district. Fruit farming is not developed in this region because of unfavorable climate and soil, farmers tendency towards the traditional crops, area of sugarcane and jowar crops high, economically poor farmers.

Table 2 Solapur District : Level of Fruit Farming Region

Sr. No.	Ranking co-efficient index	Level of development	No of tahsils	% to total	Name of tahsils
1	Less than 4.5	High	2	18	Barshi, Madha
2	4.5 to 6.0	Medium	4	36	Mohol, Karmala, Malshiras, Pandharpur,
3	6.0 to 7.5	Low	3	27	Sangola, Akkalkot, S.Solapur
4	Above 7.5	Very low	2	18	Mangalwedha, N.Solapur

SSFD (Strategy For Fruit Farming Development)- Today, development of fruit farming is one of the most important problems in drought prone area to increase the total agriculture area, per capita income, living standard of farmer, employment oppourchnity. In this regard, fruit crop area, production and productivity in the district are too short to fulfill the requirement of economic balance of the district. It is necessary to take up massive effort on war footing to develop fruit farming in the district. For this following strategy can apply.

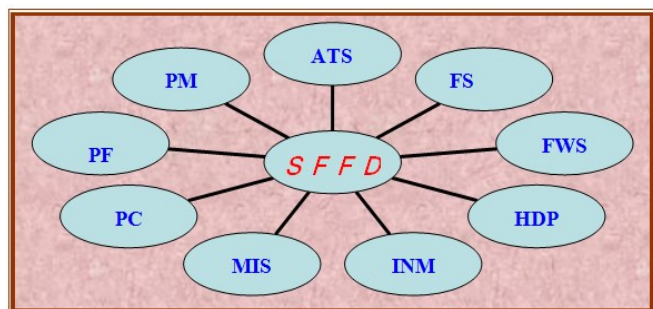


Fig. 3-

ATS (Anti-Tress spray) is recommended to protect the fruit crops during severe drought condition.

FS (Fertigation System) provides essential elements directly to the active root zone, thus minimising losses of expensive nutrients, which ultimately helps in improving productivity and quality of farm produce. Fertigation is ideally suited for high-tech horticultural production systems since it involves not only the efficient use of the two most precious inputs i.e., water and nutrients but also exploits the synergism of their simultaneous availability to plants.

FWS (Farm level water storage) is essential in study for fruit farming which can be increase fruit crops area and production. For these water tank and Shate tale are needful way of farm level water stove rage.

HDP (High Density Planting) is one of the method to enhance productivity of per unit area both in short duration and perennial fruit crops

INM (Integrated Nutrient Management) refers to maintenance of soil fertility and plant nutrient supply to an optimum level for sustaining desired crop productivity through optimum of the benefits from all possible sources of plant nutrients in an integrated manner. Nutrients are essential for productivity and quality of different fruit crops.

MIS (Micro-Irrigation System) is irrigation system with high frequency application of water in and around the root zone of plant system. Micro irrigation are saving of fertilizer up to 30%; increase in yield upto 100%; saving of water upto 70%; prevention of weed growth; saving of energy; improving in quality of produce. Drip Irrigation is most useful micro-irrigation system.

PC (Protected Cultivation) of fruit crops is production of high quality produce for internal and domestic market. In this technology the low polytunnel, shade net, polyhouses etc. can be used local material to cut down the cost and protect fruit from insects, birds, animals, suns ultra violet rays.

PF (Precision Farming) can be defined as cultivation by adopted those technologies which give maximum precision in production of a superior crop with a desired yield levels and quality at competitive production. The technology will involve integration of different systems involving computers, Global Positioning System (GPS), GIS, Sensors and application control.

PM (Plastic Mulching) is a practice of covering the soil surface around the plants to make conditions more conducive for plant growth through in-situ moisture conservation and weed control. Use of dry leaves, straw, hay, stones etc. as a mulching material has been prevalent for ages.

Conclusion

The analysis reveals that there are tremendous variations in level of fruit farming through out the region. Only 18.18 percent area of district having dynamic fruit farming region in which tahsils all fruit crops highly cultivated. Active fruit farming region of district is also large in district. Akkalkot, Sangola, South Solapur Tahsils have high prospectus for future fruit farming development. Mangalweda and North Solapur are the problematic fruit farming tahsils in district. For the development of fruit farming some *hi-tech* technique suggested to the orchards of Solapur District.

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