



**GINGER CULTIVATION IN SATARA DISTRICT:
A GEOGRAPHICAL ANALYSIS**

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INTRODUCTION:

In the era of globalization, agriculture in developing countries is facing many problems. Inadequate and inferior production of cash crops is one of the problems being faced by Indian agriculture. So it is the need of the time to increase area under cash crops and there quality as alternatives for traditional food crops. Cultivation of condiments and spices has good scope in India. Infact, varied agro-climatic conditions prevailing in India are suitable to grow almost all spices. India is largest producer and exporter having an area of 1,05,501 ha. with a production of 5,17,835 tons of the ginger.

Maharashtra is one of the leading producers of ginger in which Satara district plays important role in quality ginger cultivation and production since long back. Although area under this crop is less in Satara district perhaps this is a good step towards the great revolution. As compare to sugarcane this is a more beneficial crop of this district. Besides these the most important advantage of ginger cultivation is that it could be stored in the farm for 1 to 2 year and it can be harvested when the market rate are favorable. As a result recently many farmers are attracted toward ginger cultivation.

STUDY REGION:

The Satara District located between 17° 5' to 18°11' North latitudes and 73°33' to 74°55' East longitudes occupying an area of 10,492 sq.kms with a total population 30,11,204 according to the census of 2011 in southern Maharashtra and administratively it consists of eleven tahsils .(fig.1) The region presents diversified physiography with hilly region dominated by leeward slopes of western Ghats in west and alternate valleys and ridges culminating gradually into plateau in the east. The soils vary from laterite patches in the west through deep medium block

alluvials of the river in the center and poor gray soils in the east. The monsoon climate dominates the region with variation in heat and cold. The region receives rainfall from south west monsoon averaging between 200 mm to 5000 mm. The eastern part which fairly falls in the rain shadow belt experience frequent drought conditions.

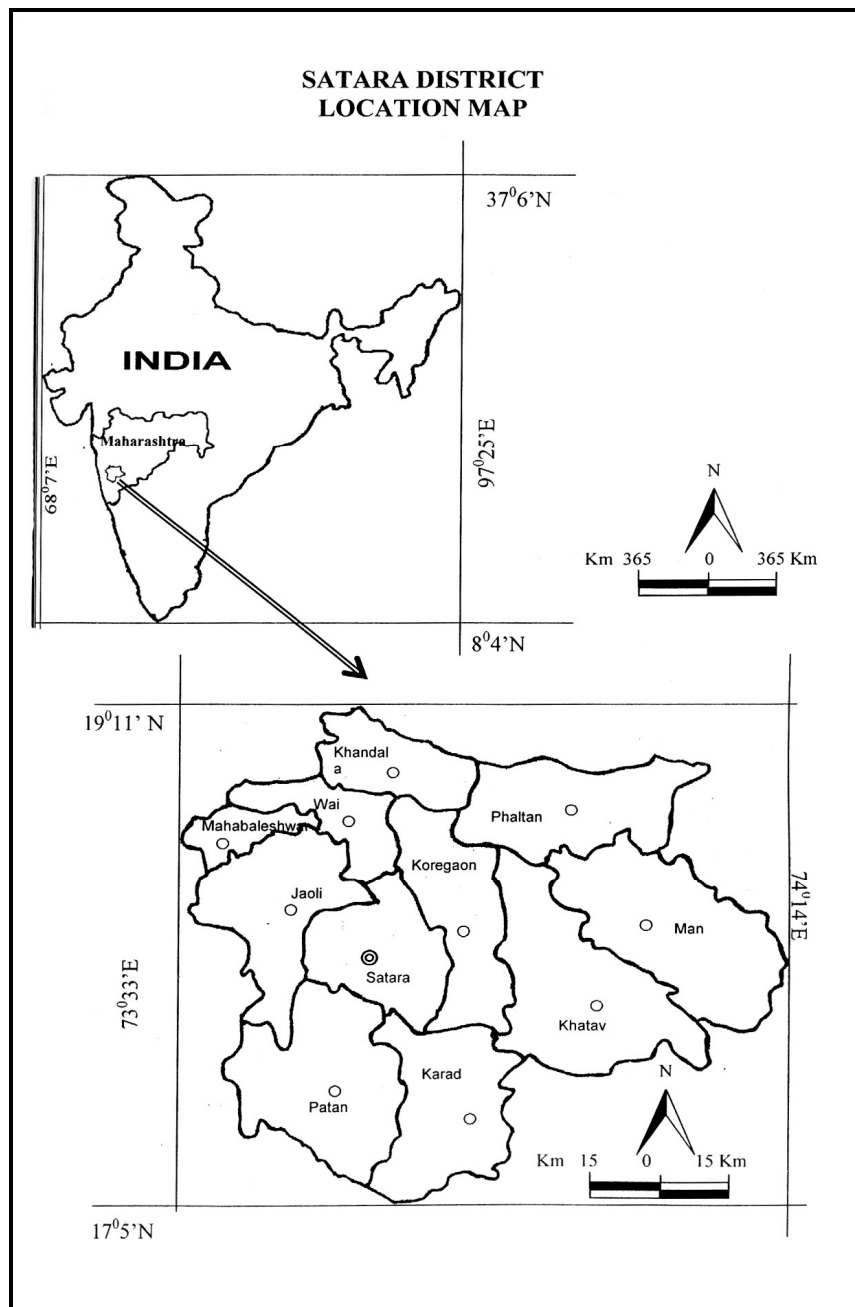


Fig. No. 1

OBJECTIVE:

To analyse geographical basis and spatio-temporal pattern of ginger cultivation in Satara district.

DATABASE AND METHODOLOGY:

The study is based on both primary and secondary data. Primary data is collected through intensive field survey and observations. Moreover, secondary data is obtained from unpublished and published records of the agricultural and horticultural department of Satara district especially Social-Economic Review and District Statistical Abstracts for the year of 2004-2005. The processed data is represented in the form of table, graph and choropleth map.

PHYSICAL DETERMINANTS OF GINGER CULTIVATION:

The region presents diversified physiography located in the Krishna and Nira basins. The study region neither experiences abrupt changes of temperature nor extremes of hot or cold.

The daily maximum temperature in hot season is 34°C to 37°C while the daily minimum temperature in cold season is between 12°C to 15°C which is suitable for ginger cultivation. Moreover, the region receives rainfall from south west monsoon ranges between 300 mm. in the east and 5000 mm in the west. The eastern part, which is fairly falls in the rain shadow belt experiences frequent drought conditions which is main constraint in the development of agriculture. Besides these western part goes under very high rainfall area which is quite risky for ginger cultivation and hence ginger cultivation is developed in the central part of the district where favorable climatic conditions prevail. Especially rainfall variability below 10 percent in the west, 10 to 20 percent in central, 20 to 30 percent in middle east and above 30 percent in very eastern part of the district affects on agriculture and there by ginger cultivation.

Soils of the study region are mainly of trap origin derived from basalt rock. The laterite soil and black soil are major soil type found in study region. Especially soil shows a definite topo-sequence of shallow soil on ridge, medium deep soil on slope and deep soil at the lower reaches of the streams. The distribution of the laterite soil and black soil in the study region is above 24 and 76 percent respectively. Perhaps black soil again divided into brown soil locally known as "Malran" or "Murum" (41.6 %), medium black soil (22.4%), and deep black soil (11.9 %). In which murum

soil is of brown colour having 7 to 7.5 PH and excellent drainage capacity because of 47-50 percent sand availability. And hence these well drained soil is very much suitable for ginger cultivation.

SPATIAL PATTERN OF GINGER CULTIVATION:

Fig. no 2 and table no.1 shows spatial pattern of ginger cultivation in Satara district. Based on the area under ginger cultivation the following are the four ginger cultivation regions, which have emerged in the study region. The region has 1,537 hectares of area spread in 485 villages in the region for the year 2004-2005.

Table1: Tahsilwise Area under Ginger Cultivation in Satara District, 2004-05.

Sr.No.	Tahsil	Area in Hectares	Share in Percent to District Ginger Area	Number of Villages Under Ginger Crop
1	Koregaon	685	44.57	103
2	Satara	416	27.07	110
3	Wai	197	12.82	68
4	Karad	133	8.65	59
5	Khatav	64	4.16	77
6	Patan	27	1.76	30
7	Jaoli	7	0.46	15
8	Phaltan	6	0.39	16
9	Mahabaleshwar	1	0.06	N.A
10	Khandala	1	0.06	7
11	Man	0	0.00	0
	District	1537	100	485

N.A.: Data not available

Source: District Superintendent of Agriculture (Horticulture Section) Office, Satara.

1. HIGH PROPORTION OF GINGER REGION (> 500 ha.):

The high proportion of ginger cultivation is observed only in Koregaon tahsil. This is the core area of ginger cultivation with 685ha. The Koregaon tahsil comprising 44.57 percent of ginger cultivation among the district. The Koregaon tahsil shares 1.31 percent of ginger area to total gross area sown. Out of 139 villages, 103 villages are under ginger cultivation. It means 74 percent villages are under ginger crop. The farmers of the region have adopted the ginger crop on

P.Y. Salunkhe, Dr. C.T. Pawar & Dr. V.T. Gharpure

commercial basis. The crop has been selected and adopted under a keen observation of agricultural experts through trial and error method. Availability of suitable climate, well drained brown soil, availability of water either from well irrigation or tube well irrigation, fluctuation in marketing, constant efforts, innovative farmers, keen planning for cultivation practices and more lucrative than sugarcane are the important contributing factors responsible for the high percentage of ginger cultivation in Koregaon tahsil.

2. MODERATE PROPORTION OF GINGER REGION (300-500 ha.):

This region includes Satara tahsil. This is the second largest ginger cultivating tahsil with 416 ha. It contributes 27.07 percent of ginger area of the district. The Satara tahsil shares 0.77 percent of ginger area of total gross area sown. Out of 208 villages, 110 villages are under ginger crop. In short 52.88 percent villages are under ginger crop. It is observed that the tahsil utilizes the maximum irrigation facility from river Krishna, Venna, and Urmodi. Satara tahsil is a heartland of irrigation facility which is helpful for ginger crop. Besides these suitable climate, suitability of soil, progressive farmer, fluctuation in harvesting, nearness of market center, high frequency of transport facilities are the crucial factors for the moderate proportion of ginger cultivation in Satara tahsil.

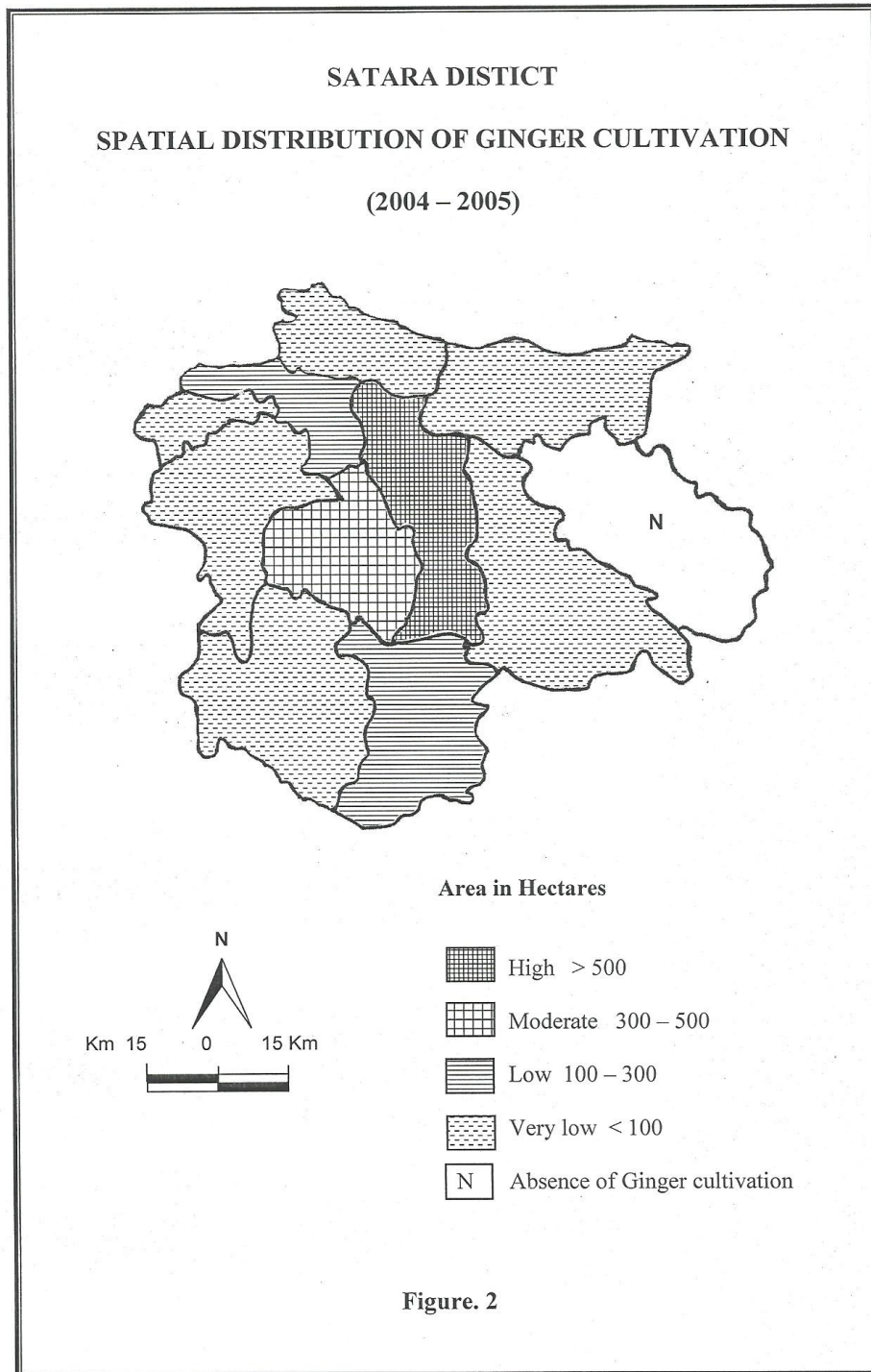
3. LOW PROPORTION OF GINGER REGION (100-300 ha.):

The region of low proportion is observed in Wai and Karad tahsil. They have 197 ha and 133 ha area under ginger cultivation respectively. In short these tahsil shares 12.82 and 8.65 percent of ginger area respectively to the total area under ginger cultivation in the Satara district. Wai tahsil has undulating topography with poorly drained black soil causes low proportion of area under ginger cultivation besides these Karad tahsil has highest percent of plain area than any other tahsil and poorly drained soil. And hence area under ginger cultivation is in plateau stage. After all high rainfall conditions ceased the area under ginger cultivation in these tahsils.

4. VERY LOW PROPORTION OF GINGER REGION (> 100 ha.):

The region of low hectareage is mainly observed in the western and eastern part of the district. The very high rainfall conditions and

undulating topography in the west affects the cultivation of ginger in the tahsil of Jaoli and Patan. Moreover the eastern part has the major constraint of inadequate water which lead to very low proportion of ginger hectarage. It includes the tahsils like Khandala, Phaltan and Khatav. Climatically these tahsils are not suitable for ginger cultivation and hence such tahsil have very low proportion of ginger region.



TEMPORAL VARIATION OF GINGER CULTIVATION:

The farmers of the Satara district recognized that, this cash crop gives maximum profit than any other cash crop. And hence gradually many innovative farmers attracted towards the ginger cultivation in different parts of the Satara district.

Table no. 2 shows that spatio-temporal variation in ginger cultivation in Satara district from 1965-66 to 2004-05. There is tremendous change observed in forty years. It can be perceived from the table that cultivation of ginger has been increasing with gradually as the aggregate area shifted from 181 ha. In 1965-66 to 1,537 ha. in 2004-05. It has been observed that the area has increased by 8.49 times of Satara district up to the year 2004-05.

In case of tahsilwise temporal variation, the area under ginger in Koregaon tahsil was 19 ha. In 1964-65 which shifted up to 685 ha. in 2004-05. Behalf of this the area under ginger in Satara tahsil increased up to 416 ha. After all due to the favorable climatic condition the area under ginger cultivation in Satara and Koregaon tahsil has enhanced consistently as compare other tahsils.

Table 2: Satara District: Spatio-Temporal Variation in Ginger Cultivation. (1964-65 to 2004-05) (Area in hectares)

Sr. No.	Tahsil	1964 – 65	1973 - 74	1984 - 85	1994 - 95	2004 - 05
1	Koregaon	19	79	180	314	685
2	Satara	149	201	265	340	416
3	Wai	2	2	45	110	197
4	Karad	4	34	50	84	133
5	Khatav	1	5	18	30	64
6	Patan	5	17	21	23	27
7	Jaoli	1	1	2	3	7
8	Phaltan	0	0	1	3	6
9	Mahabaleshwar	0	0	0	0	1
10	Khandala	0	1	2	1	1
11	Man	0	0	1	2	0
	District	181	340	585	910	1,537

Source: District Superintending Agriculture Office, Satara
Socio-Economic Abstract of Satara District
Dy. Director, Horticulture Department, Satara

CONCLUSION AND RECOMMENDATIONS:

The analysis reveals that relatively high and moderate proportion of ginger cultivation is observed in Koregaon and Satara tahasils respectively due to favorable climate, increasing irrigation facility, fluctuation in harvesting, good transportation facility, market facility and innovative farmers in related tahsils. The zone of low proportion is observed in Wai and Karad tahsil due to high proportion of poor drained soil and plain area respectively. Moreover very low proportion is observed in Mahabaleshwar, Patan, Jaoli tahsils due to undulating topography and very high rainfall conditions and in Khatav, Khandala, Phaltan, Man tahsils due to drought prone conditions.

To minimize the regional imbalances and develop ginger cultivation in the study region, it is essential to provide adequate water resources in eastern part and selection of sufficient well drained soil or slopy land for ginger cultivation in high rainfall areas.

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