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# संशोधक

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आज़ादी का  
अमृत महोत्सव



इतिहासाचार्य वि. का.राजवाडे संशोधन मंडळ, धुळे



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इतिहासाचार्य वि. का. राजवाडे मंडळ, धुळे  
या संस्थेचे त्रैमासिक

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महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळाने या नियतकालिकेच्या प्रकाशनार्थ अनुदान दिले आहे. या नियतकालिकेतील लेखकांच्या विचारांशी मंडळ व शासन सहमत असेलच असे नाही.



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# A Geographical Study of Orange Cropping Pattern in Amravati District – 2000-01 to 2020-21

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## Abstract :

Amravati district is known as the largest orange-producing district in the entire Vidarbha. Orange is widely cultivated in the Amravati district in the foothills of the Satpura range in the south of Madhya Pradesh. The black soil, clay loam, or lateritic soils is mainly found in the Amravati district. Amravati district has a total of 14 Talukas where there is a diversity of orange production. The orange crop is grown in both seasons, known as Ambia blossom and Mrig blossom. The orange crop is largely affected by the factors like climate & soil. The farmers produce Oranges as an important cash crop. But today orange productivity of the Amravati district is also found affected by climate change and global warming.

**Keywords :** Orange Crop, Cropping Pattern, The climatic condition for Orange crop

## Introduction :

Amravati is the northeastern region of the state of Maharashtra. Situated in the central part of India. The Vidarbha (Amravati) region is known for its growing major crop of oranges and cotton. Amravati district is a major orange-producing district in western Vidarbha. Mandarin orange (*Citrus reticulata*) is most common among citrus fruits grown in India and Vidarbha. It occupies nearly 40% of India's total area under citrus cultivation. Nagpur mandarin is one of the best mandarins in the world, as well as Amravati (Vidarbha). Production of this orange crop in

the central and western parts of India is increasing per year. Amravati is the major orange cultivator in Vidarbha. But Changing weather conditions in Vidarbha affected orange cultivation in this region.

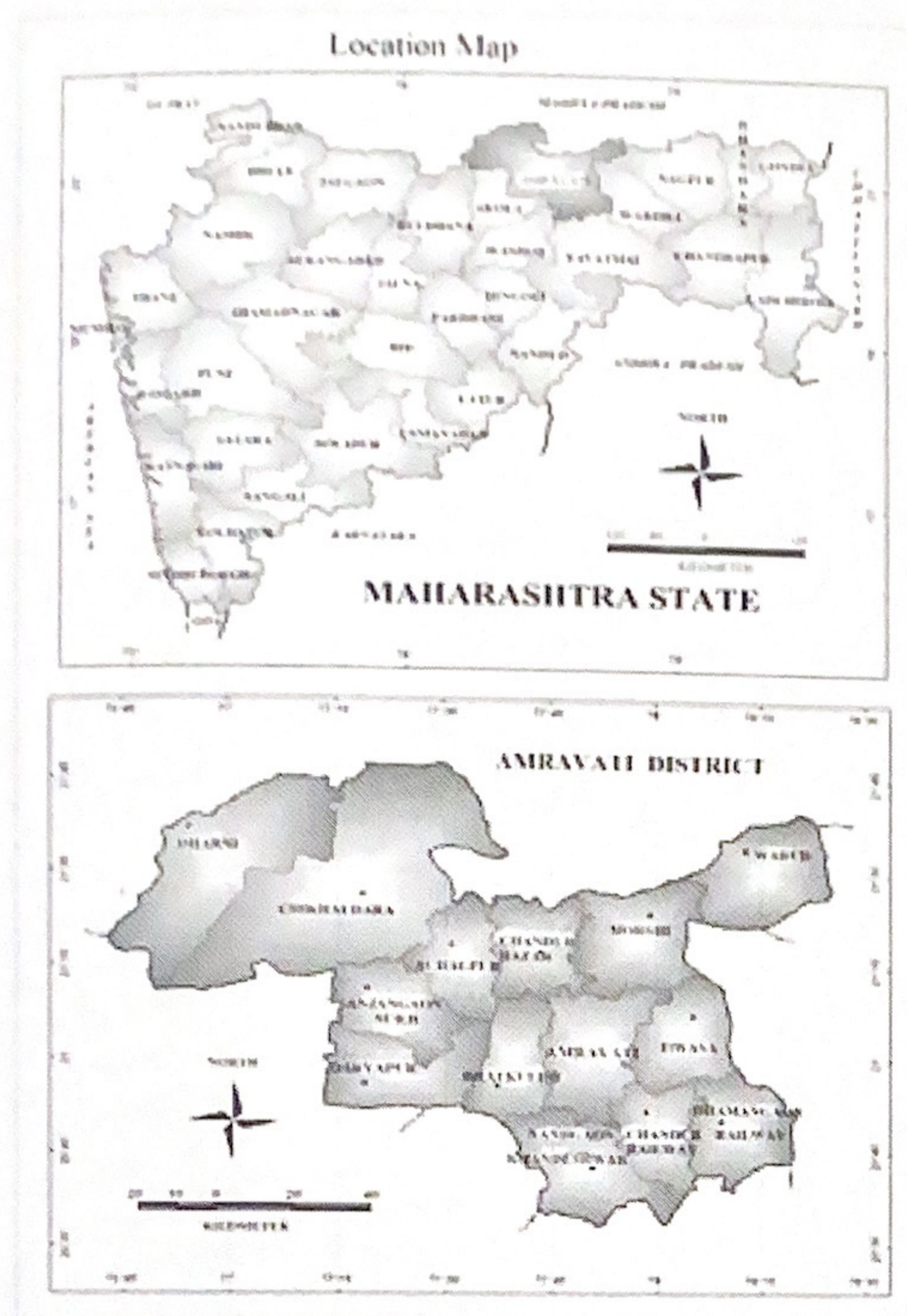
“Proportion of area under various crops at point of space and time.”

Cropping systems based on climate, soil, and water availability have to be evolved for realizing the potential production levels through efficient use of availability use of available resources.

Orange cropping pattern has been studied with 10 various crops in the Amravati district. The study of the Orange cropping pattern is done by referring total of 14 talukas in the district. These crops include Orange, Jowar, Rice, Wheat, Pigeon, Groundnut, cotton, Gram, Spices, and Sugarcane out of 10 crops Orange cropping area is selected for details studies. It is found that the cropping pattern is generally affected by the farmer's choice of crops but the physical, social, economic & political factor also affects a cropping pattern, and The Amravati district's crop productivity is also affected by climate change and global warming.

## Study Area:

Amravati from Maharashtra state is an important & major Orange-producing district. This district is located on the North boundary of Maharashtra State. The location of this district is 23° 32' north to 21° 46' North latitude and between 76° 37' East to 78° 27' East longitude.



The total area of the Amravati district is 12210 sq. km. The soil from the Amravati district is black, clay loam, or lateritic soils which is favorable for Orange production. Amravati district has a total of 14 talukas which include Amravati, Bhatkuli, Nandgaon Khandeshwar, Anjangaon Surji, Daryapur, Warud, Morshi, Achalpur, Chandurbazar, Tiwasa, Chandur Railway, Dhamangaon Railway, Dharni, and Chikhaldara etc.

### Objective :

- To make a comparative study of the change in the orange crop in the Amravati district in 20 years between 2000 and 2021.
- To find out the decrease or increase in the Orange area & growth in other crops.
- To study the impact of changes on the orange crops in temperature and variation in rainfall of Amravati District.
- To find out new genres of Orange that would be able to face increasing temperature.

- To study the farmer's trend to cultivate various other crops, govt. policy & the impact of geographical factors, climatic changes on Orange cropping pattern.

### Methodology :

The information required for the above research paper is based on secondary data from Amravati District Meteorological Department and District gazetteer Department. The above research has been done from the statistics department of Amravati district as well as the secondary statistics of agriculture in the district socio-economic survey for which the district socio-economic survey report from 2000 to 2021 has been used for statistics.

Also, in the above research paper, some conclusions have been drawn by adopting the formula of the general cropping pattern method.

### Climatic Condition for Orange Crop :

Amravati – (Nagpuri) oranges blossom during the monsoon season and are ready to be harvested. The orange crop grows two times a year. The fruit available from September to December is Ambiya blossom which has a slightly sour taste. It is followed by the sweeter Mrig blossom crop in January.

Orange grows successfully in all frost-free tropical and sub-tropical regions up to 1500 meters above. Annual rainfall of 100 to 125 cm. and temperature ranging from 10°C to 35°C is suitable for the cultivation of the crop. Orange crops are grown in sandy loam or alluvial soils of north India to clay loam or lateritic soils in the Deccan plateau and north-eastern hills.

### Taluka wise Orange cropping pattern in Amravati District :

The cropping pattern of 10 crops that were selected for Taluka wise cropping pattern from Amravati district is divided into the division-very high (above -30%), high (20-30%), medium (10-20%), & low (0 -10%). The following



formula is used for getting an Orange cropping pattern.

**Formula: -**  $CP = Ca \div N \times 100$       **Cp** = Cropping Pattern  
**Ca** = Orange crop area in the study area  
**N** = Total cropping area in selected region for study

**Taluka wise Orange cropping pattern in Amravati district- 2000-01 & 2020-21**

Talukas	Year - 2000-01			Year - 2020-21		
	The total area under crops	The area under the orange crop	Orange cropping pattern	The total area under crops	The area under the orange crop	Orange cropping pattern
Dharni	55740	589	1.05	43011.39	14	0.03
Chikhaldara	79360	1487	1.87	30355.56	110	0.36
Anjangaon Surji	64522	3520	5.45	53126.85	3575	6.72
Achalpur	75530	618	0.81	61284.00	12663.5	20.66
Chandur Bazar	72749	3209	4.41	63715.47	15238	23.91
Morshi	92111	14091	15.29	58236.66	12335.9	21.18
Warud	71524	15094	21.10	56260.25	22492	39.97
Tiwasa	55890	8950	16.01	42730.97	2116.8	4.95
Amravati	80698	4617	5.72	65693.00	1299.9	1.97
Bhatkuli	57889	3415	5.89	54024.80	51.8	0.09
Daryapur	65806	1352	2.05	72742.27	9.7	0.01
Nandgaon Khandeshwar	71132	1375	1.93	64880.00	865.3	1.33
Chandur Rly.	59828	2567	4.29	40228.00	1532	3.80
Dhaman.Rly	53596	1020	1.90	57520.20	2271	3.94
<b>Total</b>	<b>956375</b>	<b>56904</b>	<b>5.94</b>	<b>763809.42</b>	<b>74575</b>	<b>9.76</b>

Source: District Socio-Economic Survey, Amravati District. 2000 to 2021.

A comparative study of cropping patterns has been carried out between the crop year 2000-01 and 2020-21 in the Amravati district. During 2000-01 the highest cropping pattern of orange (Above 30%) is not seen. in any talukas. A high orange cropping pattern was (20 -30%) seen in only Warud talukas. There was a medium cropping pattern (10 - 20%) of orange crops seen in talukas like Morshi and Tiwasa. The lowest orange cropping pattern (0-10%) was seen in Anjangaon Surji, Amravati, Bhatkuli, Chandur Bazar, Dharni, Chikhaldara, Achalpur, Nandgaon Khandeshwar, Daryapur, Chandur Rly. & Dhaman.Rly. It is also seen that during 2000-01 orange cropping pattern was in the low range in the total Amravati district.

During 2020-21 the highest cropping pattern of orange was (Above 30%) is seen in only warud

talukas, high orange cropping pattern was (20 - 30%) seen in Achalpur, Morshi, Chandur Bazar talukas. There was a medium cropping pattern (10 - 20%) of the orange crop not seen in any talukas and the lowest Orange cropping pattern (0-20%) was seen in Dharni, Chikhaldara, Anjangaon Surji, Tiwasa, Nandgaon Khandeshwar, Daryapur, Amravati, Bhatkuli Chandur Rly. & Dhaman.Rly. It is also seen that during 2020-21 Orange cropping pattern was medium & low range in the total Amravati district.

As per the comparison of both crop years, it is seen that the cropping pattern of Orange is positively changed during 2020-21 than 2000-01 in the Amravati district. The Orange cropping area is below 10% in all various crops. The orange cropping pattern in the Amravati district



is seen as higher & medium in 2020-21 compared to 2000-01. In the conclusion; the cropping pattern of Orange is very good in 2020-21 than in 2000-01.

### Conclusion :

1. In 2000 - 2001, the orange crop pattern in Warud, Tivasa, and Morshi talukas is high whereas the crop pattern in other talukas is low.
2. In 2020-21, the orange cropping pattern of Warud taluka is very high followed by Achalpur Chandurbazar and Mulshi talukas.
3. Warud taluka of Amravati district in Vidarbha is a major producer of orange crops.
4. Warud, Morshi, Chandurbazar, and Achalpur talukas located south of the foothills of the Satpura Mountains in the south of Madhya Pradesh are found to have a suitable climate for orange cultivation.
5. In the foothill region of Satpura mountain, the orange cropping pattern is high compared to the overall district and in other talukas, it is found to be a low cropping pattern.
6. Less than 10 percent of the total cultivated area in the Amravati district appears to be under the orange crop.
7. Compared to 2000-2001, there is a two-fold increase in the orange crop pattern in 2020-21.
8. After low rainfall and drought conditions from 2000 to 2009, the improvement in rainfall after 2013 and the increase in groundwater level have led to an increase in orange cultivation.
9. If a processing industry based on the orange crop is established in the Amravati district, the orange crop format can increase and the farmer can get more value from the crop.

### References: -

- 1) Dr. Fule Suresh (2000) – Krushi Bhugol, Vidyabharti Prakashan, Latur.
- 2) Husen Majid (2000) – Agriculture Geography, Ravat Publication, Jaipur
- 3) Dr. V.J. Patil & Dr. Shailesh Wagh (2001) - Krushi Bhugol, Prashant Publication, Jalgaon
- 4) Dr. V.T. Gharpure (2001) - Krushi Bhugol, Pimpalapur Publication, Nagpur
- 5) Dr. Singh Indira & Dr. Satnam Singh (2006) – Agriculture Geography of India - Srishti Book Distributors, New Delhi.
- 6) Sharma P.S. (1973): Agriculture Regionalization of India, New Hight Publishing & Distributors, Delhi
- 7) Tiwari R.C., Singh B.N. (2000) – Krushi Bhugol, Prayag Pustak Bhavan, Ilahabad.
- 8) Gupta, S.L. (1971): The Cropping Pattern of Haryana, G.R. of India, Vol. XXXIII, No. 1, March 1971, pp 23-27.
- 9) Das, M.M. (1982): Agricultural land use and cropping pattern in Assam, Geographic Review of India, 1982, pp 32-35.
- 10) Mishra, Pratibha & Bhattacharya, R. (1992): Cropping Pattern in Alwar Dist., G.R. of India, Vol. 54, No. 1, March 1992.
- 11) Gupta, R.D. & Singh, K.K. (1989): Estimating Orange Yield of some station in India Based on weather parameter, The N.G. of India, Vol. 36, pt. 3, Sept. 1989, P 177.
- 12) Singh, Kashinath K. & Sing, Babban (1970): Land use Cropping Pattern & their ranking in Shahganj Tahsil a geographical analysis, The N.G. J. of India, Vol. XXI, pat 3 & 4, Sept-Dec. 1970, pp 221-235.
- 13) Economic & Statistical Dept. Mumbai (1995): District socio-economics survey (Amravati District –2006 to 2021)



## इतिहासाचार्य वि. का. राजवाडे संशोधन मंडळ, धुळे

विक्रीसाठी उपलब्ध असलेल्या दुर्मिळ ग्रंथांची यादी

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अ.न.	पुस्तकाचे नांव	किंमत रुपये
१)	छत्रपती शिवाजी महाराजांची पत्रे	३५०
२)	शिवाजीची राजनिती	४५०
३)	राजवाडे चरित्र	७००
४)	इ.वि.का.राजवाडे समग्र साहित्य (खंड ४ ते १०) ३५० × ६	२१००
५)	मराठ्यांच्या इतिहासाची साधने (खंड १ ते ११) ४०० × ११	४४००
६)	The Sources of Maratha History ५ खंड ६०० × ५	३०००
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