IIP International Multidisciplinary Research Journal
IIPIMRJ

An Online Peer-Reviewed / Refereed Journal
Vol: 02 No. Issue IV, (October-December) (2025)
Impact Factor: GSRD-IF: 5.001
ISSN: 3049-2734 (Online)

A STUDY OF RANKING OF VEGETABLE CROP IN SOLAPUR DISTRICT

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Article Info

Article History:
Received: 17th Sep 2025
Accepted: 01st Oct 2025
Published: 15th Oct 2025

Keywords:
Solapur District
Vegetable Crop Ranking
Agricultural Geography
Crop Distribution

ABSTRACT

The present research paper analyzes the ranking and spatial distribution of vegetable crops in Solapur District, Maharashtra, with special reference to the years 2001–2002 and 2021–2022. Using secondary data obtained from official government sources such as the District Census Handbook, Gazetteers, and the District Statistical Abstract, the study ranks vegetable crops based on their share of total cultivated area. The results indicate that onion consistently dominates vegetable cultivation in the district, occupying 49.06% of the total vegetable crop area in 2001–2002 and increasing to 76.73% in 2021–2022. Tomato and brinjal follow as the second and third major crops, showing spatial variations across tahsils. The analysis reveals that physical, climatic, and socio-economic factors such as soil type, rainfall, water availability, and market demand play decisive roles in determining the cropping pattern. The findings highlight the dynamic nature of agricultural development in the district and emphasize the need for region-specific strategies to improve productivity and promote sustainable vegetable farming.

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How to Cite: Maske, S. S. (2025). A Study of Ranking of Vegetable Crop in Solapur District. IIP: International Multidisciplinary Research Journal (IIPIMRJ), 2(IV), 105–112.

INTRODUCTION:

Vegetable cultivation plays a crucial role in agriculture and the economy of a region. It not only contributes to food security but also provides essential nutrients, improves the health of people, and generates employment opportunities. Different vegetable crops are grown depending on factors such as climate, soil type, availability of water, and market demand.

Ranking of vegetable crops refers to the process of arranging them in order based on certain criteria such as area under cultivation, production volume, yield per hectare, or economic importance. This ranking helps policymakers, farmers, researchers, and agricultural planners to identify the key crops that are driving agricultural growth and those that need more support or research.

Understanding the ranking of vegetable crops is important for improving crop management, prioritizing investments, and enhancing productivity. It also helps in planning crop diversification, ensuring balanced nutrition, and promoting sustainable agricultural practices.

In this study, the ranking of vegetable crops is analyzed based on available data to highlight the trends, challenges, and opportunities in vegetable farming. This serves as a foundation for making informed decisions and advancing agricultural development.

OBJECTIVES:

The main objective of the present research work is to have detailed study the ranking of vegetable crop in the study region.

DATA BASE AND METHODOLOGY:

The data is collected from various sources, which includes both published and unpublished books, government publications and private publications. Data published by Government and non government agencies, research organizations, research studies formed the source of secondary data. Secondary data has been obtained from the District Census Handbook, District Gazetteers, District Statistical Department and Socio-Economic Review and District Statistical Abstract of Solapur District 2021-22.

Collected data is processed and presented in the forms of tabular and graphical. The ranking of vegetable crops is generally calculated based on key agricultural indicators such as area under cultivation, production and productivity (yield per hectare). Here the researcher calculated the ranking of vegetable crop based on area under cultivation by using following formula.

$$\text{Rank} = \frac{\text{Vegetable Crop Area}}{\text{Total Vegetable Crop Area}} \times 100$$

The vegetable crop with the highest percentage of total vegetable cultivated land gets Rank 1, the second-highest gets Rank 2 and so on.

STUDY AREA:

Solapur district is an administrative district in the state of Maharashtra in India. The district headquarters are located at Solapur. The Solapur district is located between 17^0 10' North to 18^0 32' North latitudes and 74^0 42' East to 76^0 15' East longitudes (Fig. 1). The study area is situated entirely in the Bhima, Nira, Sina and Man river basins which is a part of the Deccan plateau. The area is demarcated by Balaghat Range on the East and Shambhu Mahadeo Range in the West. The total geographical area of Solapur district is 14895 Sq. Km. divided into eleven tahsil and total population of 43, 15,527 as per 2011 census.

The district as a whole is monotonously underlain by Deccan trap basaltic lava flows. This lava flows on account of weathering given rise to undulating topography. Most of the area of the district belongs to the Deccan plateau region. The district is well defined to its west as well as to its east by the inward looking scarps of Phalthan range and Osmanabad plateau respectively. There are no prominent hill ranges in the district. The district as a whole forms a broad flat or waving basin occupied by the Bhima river, which flows in the middle in a South-Easterly direction. Except in Barshi, Karmala, Madha, Malshiras and Sangola the district has few hills and these are isolated, individual, residual resistant remnants. The chief knolls are Vadshin ghat in Barshi, Wagoba and Bodki in Karmala, Chinchgaon in Madha, Gurvad inMalshiras, Phalthan range in Malshiras and Khanapur-jat hill of Sangola tahsil.

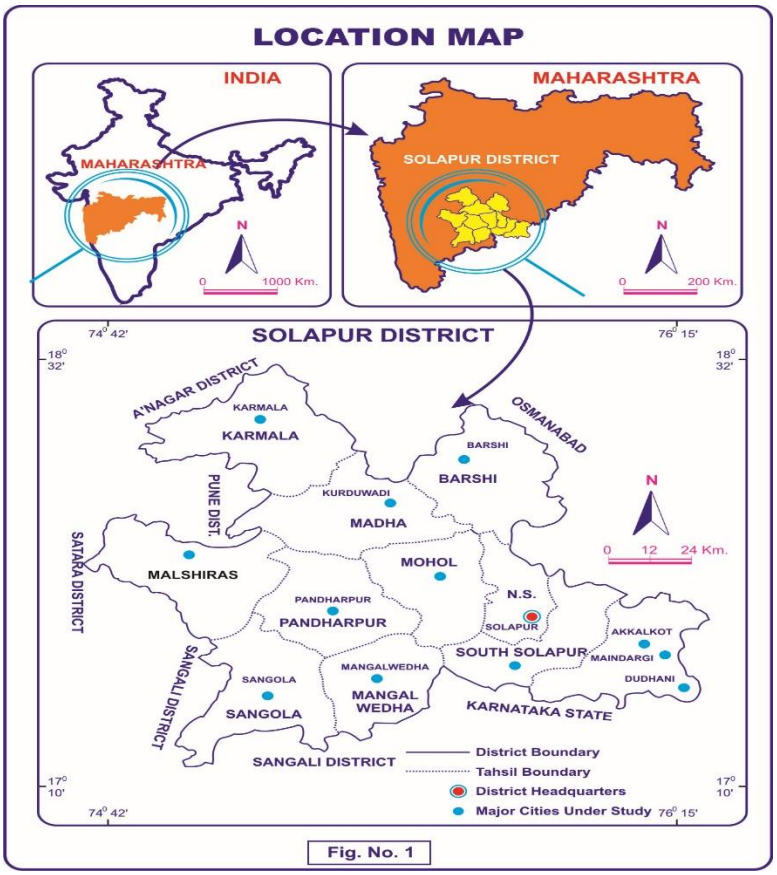


Fig. No. 1

In an average the climate of the district is dry and comparatively extreme. As the region comes under rain shadow area, rainfall throughout the year is scanty and its distribution both spatial and temporal is not uniform. Climate of Solapur district is dry as daily mean maximum temperature range between 30^0 C to 37^0 C and minimum temperature range 18^0 C to 21^0 C with the highest temperature of about 45^0 C in the month of May. The annual average rainfall is 678 mm. in Solapur district. Over all the soil of the district does not hold water, it is more granual, blackish to brown in colour and of lesser quality and more useful to cereal crops. Calcareous Kankar and nodules are commonly associated with these soils. The district has a very limited area of forest. In this district vegetation are scattered, short thorny trees, bushes grow along with tree. These trees have long system and few small leaves, short grasses grow during rainy season.

ANALYSIS:

Relative strength of vegetable crop is determined on the basis of its percentage value represented in terms of total vegetable crop area. Whereas rank order of which has been derived by calculating percentage value of each tahsil. Regarding the percentage value of each vegetable crop in vegetable crop area in the study region, Onion ranks at the top. It shares 49.06 per cent of the total vegetable crop area in the study region; it is followed by brinjal, which is also cultivation with high ranking. It shares 15.48 per cent to the total vegetable crop area. Both crops have been well survived and sustained in the study region. However, tomato ranks third, sharing 9.97 per cent of total vegetable crop area during the year 2001-2001.

Table No 1
Solapur District: Ranking of Crop (2001-2002 and 2021-2022)

Sr. No	Tahsil	2001-2002			2021-2022		
		First Rank	Second Rank	Third Rank	First Rank	Second Rank	Third Rank
1	Karmala	Onion (67.41)	Brinjal (14.77)	Tomato (3.91)	Onion (93.3)	Tomato (2.74)	Brinjal (1.54)
2	Madha	Onion (53.37)	Brinjal (16.4)	Tomato (12.86)	Onion (75.78)	Tomato (10.87)	Brinjal (6.69)
3	Barshi	Onion (46.40)	Tomato (13.85)	Brinjal (12.04)	Onion (91.54)	Brinjal (1.71)	Tomato (1.31)
4	North Solapur	Onion (4459)	Tomato (11.62)	Brinjal (9.05)	Onion (71.84)	Brinjal (3.37)	Tomato (3.25)
5	Mohol	Onion (56.19)	Brinjal (10.36)	Tomato (9.80)	Onion (66.77)	Tomato (21.31)	Brinjal (6.07)
6	Pandharpur	Onion (46.55)	Brinjal (7.95)	Tomato (6.57)	Onion (52.18)	Tomato (19.68)	Brinjal (17.95)
7	Malshiras	Onion (55.17)	Brinjal (15.11)	Tomato (6.81)	Onion (46.87)	Tomato (17.76)	Brinjal (5.61)
8	Sangola	Brinjal (28.05)	Onion (14.32)	Tomato (16.00)	Brinjal (29.59)	Tomato (24.31)	Onion (23.25)
9	Mangalwedha	Onion (43.47)	Brinjal (26.02)	Tomato (3.89)	Onion (85.19)	Tomato (5.31)	Brinjal (5.03)
10	South Solapur	Onion (43.99)	Tomato (16.72)	Brinjal (15.35)	Onion (74.93)	Tomato (4.55)	Brinjal (2.69)
11	Akkalkot	Onion (35.29)	Brinjal (20.59)	Tomato (11.18)	Onion (73.09)	Tomato (7.99)	Brinjal (2.94)
	District	Onion (49.06)	Brinjal (15.48)	Tomato (9.97)	Onion (76.73)	Tomato (8.34)	Brinjal (4.50)

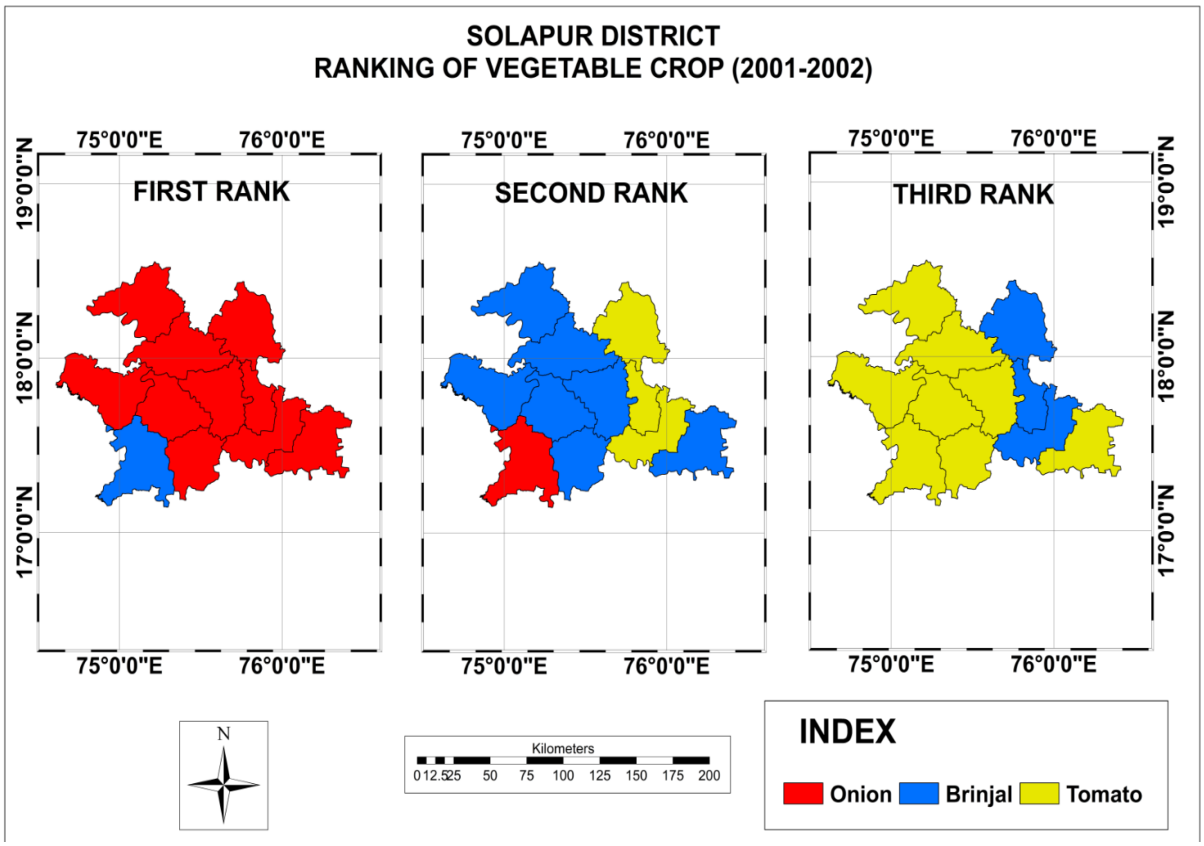
Source: Socio-Economic Review and District Statistical Abstracts of Solapur District 2001 -2002 and 2023.
Note: Figures in the bracket show percentage share of vegetable crop area in total vegetable crop area.

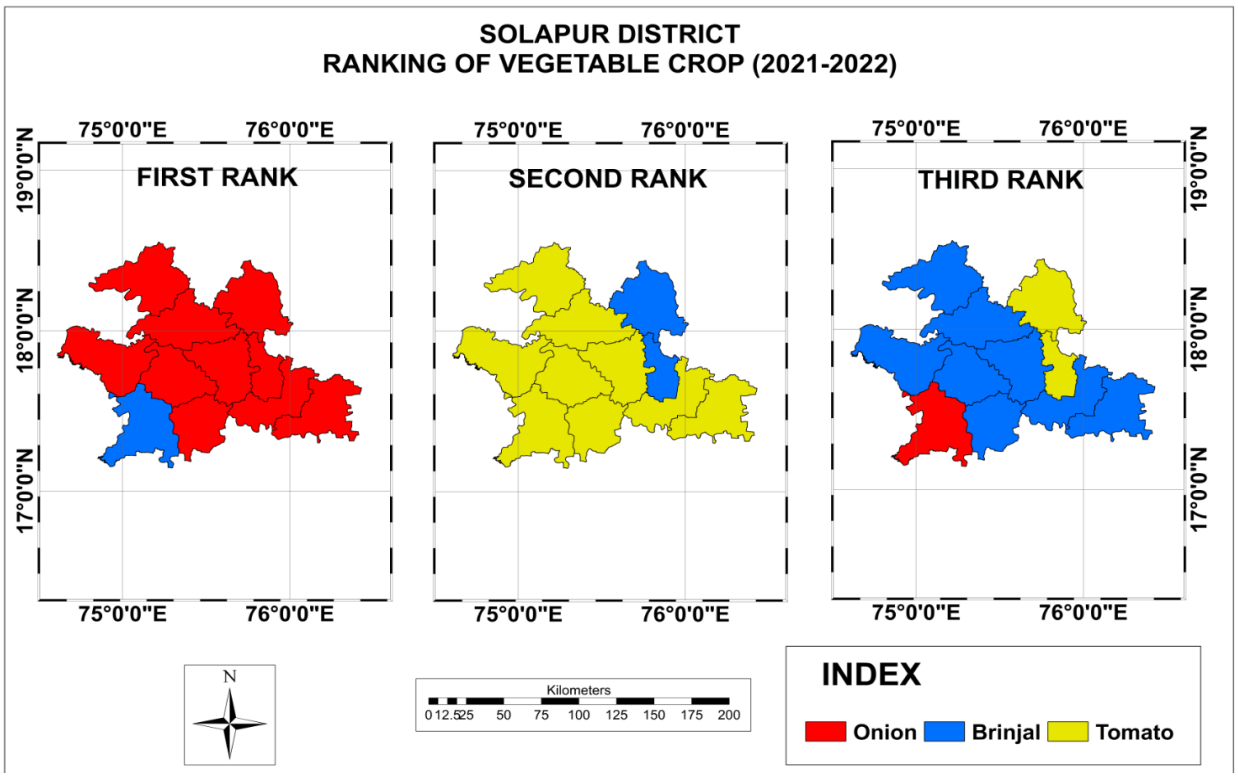
During the year 2021-2022, onion is the first ranking vegetable crop, it shares 76.73 of the total vegetable crop area in the study region. It is followed by tomato, which is also cultivation with high ranking. It shares 8.34 per cent to the total vegetable crop area. However, brinjal ranks third, sharing 4.50 per cent of total vegetable crop area in the study region. These are three major vegetable crops in the study region which all together share 74.51 per cent (2001-2002) and 89.57 per cent (2021-2022) of the total vegetable crop area (Table 1 and Fig. 2). Physical as well as socio-economic conditions have played dominant role in determining the spatial distributional and ranking patterns of vegetable crop in the study region. These physical and socio-economic factors are responsible for tahsil wise variations in the distribution and ranking of vegetable crop.

1 First Ranking Vegetable Crop

Table 1, shows that Onion ranks first in ten tahsils namely Madha, Malshiras, Pandharpur, Mohol, North Solapur, South Solapur, Karmala, Barshi, Mangalwedha and Akkalkot in Solapur district. However, in Sangola tahsil brinjal is the first ranking vegetable crop during the year 2001 – 2002 (fig 2).

During the year 2021-2022, the situation in the ranking of vegetable crops in the district was similar to that in 2001-2002. The several geographical, climatic and socio-economic factors are responsible for onion production such as favorable climate, soil conditions, moderate water availability, cash and dominant crop, government support to farmers with seeds and fertilizers, market demand and limited alternative crops. Therefore, onion is the first ranking vegetable crop in Solapur district.





2 Second Ranking Vegetable Crop

Brinjal is the second largest crop in seven tahsils such as Karmala, Madha, Mohol, Pandharpur, Malshiras, Mangalwedha and Akkalkot in Solapur district. Whereas Barshi, North Solapur and South Solapur are having tomato as second ranking crop. As well as only one Sangola tahsil is having onion as a second ranking crop during the year 2001-2002.

During the year 2021-2022, tomato is the second largest vegetable crop in Solapur district. It clearly indicate that the Karmala, Madha, Mohol, Pandharpur, Malshiras, Sangola, Mangalwedha, South Solapur and Akkalkot tahsils are having tomato as second ranking vegetable crop. It is clear that above 81 percent tahsils tomato is a second ranking vegetable crop in Solapur district. Another tahsils such as Barshi and North Solapur are having brinjal as second ranking vegetable crop in Solapur district respectively.

3 Third Ranking Vegetable Crop

Tomato is the third ranking vegetable crop in Solapur district. It clearly indicates that Karmala, Madha, Mohol, Pandharpur, Malshiras, Sangola, Mangalwedha and Akkalkot tahsils are dominant in the cultivation of tomato as third ranking vegetable crop. It means that above in 72 percent of the tahsils, tomato is the third largest vegetable crop. Whereas Barshi, South Solapur and North Solapur are having brinjal third ranking vegetable crop in the study region during 2001-2002.

During the year 2021-2022, Brinjal is the third largest vegetable crop in Solapur district. It shows that the Karmala, Madha, Mohol Pandharpur, Malshiras, Mangaledha, South Solapur and Akkalkot tahsils are having brinjal as the third ranking vegetable crop. Whereas tomato in Barshi

and North Solapur tahsils, Onion in Sangola tahsil are having third ranking vegetable crop in the study region respectively.

COCLUSION:

The present study on the ranking of vegetable crops in Solapur district reveals important patterns in the spatial distribution and dominance of major vegetable crops over the years 2001-2002 and 2021-2022. The analysis clearly shows that onion remains the most widely cultivated vegetable crop across the district, occupying a significant portion of the total vegetable crop area in most tahsils. The factors contributing to its dominance include favorable climatic conditions, suitable soil types, moderate availability of water, strong market demand, government support, and its status as a cash crop.

Tomato and brinjal also play essential roles in the vegetable farming landscape of the district, although their rankings vary across different tahsils. In particular, tomato has gained importance over time and emerged as the second-ranking vegetable in most tahsils during 2021-2022, reflecting changing preferences and agricultural practices.

The findings also highlight how physical, geographical, and socio-economic factors influence the cultivation patterns and rankings of vegetable crops. Availability of resources, market accessibility, and farmer awareness have collectively shaped the dominance of certain crops in specific regions.

The study underscores the need for targeted agricultural planning and resource allocation to enhance vegetable cultivation in the district. Understanding these trends helps in formulating policies that support farmers, improve productivity, and ensure sustainable agricultural development. The continued assessment of crop rankings will serve as a valuable tool for promoting balanced nutrition, improving rural livelihoods, and advancing the agricultural economy of Solapur district.

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