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GROWTH OF GRAPEVINE CULTIVATION IN SANGLI DISTRICT

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Abstract:-Sangli district is leading in area under fruit crops in the Maharashtra. The major fruits are grown in district i.e grapes, pomegranate, mango, sapota (chikoo), guava, jackfruit, banana and pineapple. Apart from fruit crops, grapevine is one of the main fruit crops of cropping pattern of Sangli District. As such Tasgaon, Miraj, KawatheMahankal, Palus, Walwa, Khanapur and Kadegaon leading in grapevine cultivation Jat and Atpadi tahsils in pomegranate. Apart from fruit crops, grapevine is one of the main fruit crops of cropping pattern of Sangli District. At the beginning of 20thcenturyKirlokar brother was at first planted grape (Bhokri) in Kirloskar industry area in Sangli district. After that 1958, Shri Anna Pachure cultivated grape varieties of Bhokri and Phakadi at Nandare in Tasgaon tahsil. Although grapevine cultivation was practiced since 1960, its scientific cultivation started from 1972. Besides the efforts made by innovative farmers in the region, favorable climatic condition, efficient and reliable marketing organizations are also some of the other contributing factors responsible for widespread and growth in area under grapevine of the region. The successful experiment of grapevine cultivation of Sangli district can be considered as an ideal way for the dry area of country where similar type of geographical condition. In 2013-14 there are 300069 hectare areas are under the grapevine cultivation in Sangli district. The increase grape cultivated area and growth of grape processing industry has manifold effects on socio-economic conditions in the district. In the present research paper, focused on understand the growth and spatial distribution of grapevine cultivation. For these, 2001 to 2014 the forty years period are selected to understand the growth and spatial distribution.

Keywords: Grapevine cultivation, spatial pattern, Area, productivity.

INTRODUCTION

Grape is one of the most important commercially fruit crops of the world. Grape is produced in over 91 countries worldwide (APEDA). At present India is 9th position among grapes growing countries of the world (Shikamany, 2001; Ramanan, 2012; Gade et.al, 2014)). Major grape-growing states in India are Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Punjab, Haryana, western Uttar Pradesh, Rajasthan and Madhya Pradesh. In India mainly Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu jointly contribute to more than 90 per cent of the total area and production of grape (Shanmugavelu, 2008). Sangli district is the second grape growing district in Maharashtra, more than 30 per cent of grape cropped area of the state and more than 1.75 per cent of the total cultivated area of the district. At first in the beginning of 20thcentury Kirloskar brother at first planted grape (Bhokri) in Kirloskar industry area in Sangli District (Patil, 2007). After that 1958, Shri Anna Pachure cultivated grape varieties of Bhokri and Phakadi at Nandare in Tasgaon tahsil (Gaikwad, 2007; 2014). Although grapevine cultivation was practiced since 1960, its scientific cultivation started from 1972. In 2013-14, area under grape cultivation was 30002.69 hectares and grape production of Sangli district is 713739 tones. The increase grape cultivated area and growth of grape processing industry has manifold effects on socio-economic conditions in the district. This attempt has been made to 2001-02 to 2013-14 area under grapevine cultivation in Sangli district.

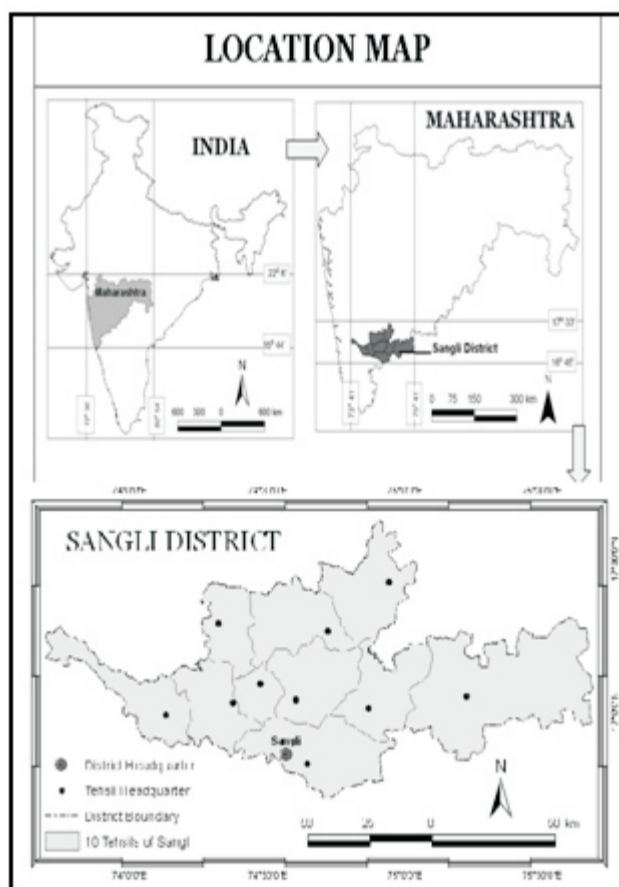
Study Area

The Sangli district is situated in western part of Maharashtra State. This district consist ten tahsils covering 731 villages. The total area extend is of 8572 sq. km. extending from 16o 45' to 17o 33' north latitudes and 73o 42' to 75o 40' east longitudes. It is bounded by Solapur and Satara districts in the North, Bijapur district in the east, Belgaum district in the south and the Ratnagiri district to the West {Fig1.1}. The climate of the district is generally dry. In general the rainfall was decreases from west to east from 4000 to 500 mm. From central part eastward the region faces severe drought conditions. The average annual rainfall of the district is 618.66 mm, the temperature ranges from 14.800C to 38.4.

OBJECTIVES

The present study was undertaken with the following objectives

1. To study the growth of grape cultivation in Sangli district.
2. To study the spatio-temporal growth of grapevine cultivation.



DATABASE AND METHODOLOGY

The study was conducted in Sangli district of Maharashtra. The present study is based on secondary data collected Department of agriculture Sangli district, District statistical office. Socio-economic review of Sangli district, District census hand book, Gazetteer agricultural epitomes and Agricultural Statistical information Maharashtra State etc. were also scanned for setting relevant information.

Table 1: Area, Production and Productivity of Grapevine in Sangli District

Year	Area in hectare	Production in tones	Productivity (tons/ha)
2001-02	8264	168138	21
2002-03	11892(50.42)	249732(48.53)	21(0)
2003-04	11272(-5.21)	247995(-0.70)	22(13.64)
2004-05	10653(-5.49)	266325(7.39)	25(0)
2005-06	11836(11.10)	295900(11.10)	25(0)
2006-07	13020(10.0)	325500(10.00)	25(0)
2007-08	14322(10.0)	358050(10.0)	25(0)
2008-09	16183(12.99)	436964(22.04)	27(8)
2009-10	18448(14.00)	507550(16.15)	27(0)
2010-11	20847(13.00)	583716(15.01)	28(3.70)
2011-12	18105(-13.15)	430713(-26.21)	26(-7.14)
2012-13	24124(33.34)	713739 (65.71)	30(15.38)
2013-14	30002(7.15)	774589(8.53)	30(0)
Correlation	0.90	0.99	0.93
Mean	15727	412224	25.538
CV	34.74	45.37	11.59

Source - Compiled by researcher

Note: figures in bracket shows simple annual growth rate

Table 1. shows the growth of area under grapevine cultivation in Sangli district. At the beginning of 2001-02, area under grape cultivation is 8264 hectare. It increased from 8264 hector to 30002.69 hector during 2001-02 to 2013-14 respectively with growth rate 263.5 per cent over period under consideration. The highest simple annual growth rate of area under grapevine production is recorded in the year 2002-2003. On the contrast, the lowest simple annual growth rate of area under grapevine cultivation as well as production of grapevine is recorded in the year 2011-12. The basic reason of negative growth rate is during this period dry drought condition and unfavorable climatic conditions are affected in study region. It has been seen from the table that the highest simple annual growth rate of grapevine production is recorded in the year 2012-13. The statistical interference correlation reveals that there high degree of positive correlation exists between area under cultivation and grapevine production. It has been also seen that the highest coefficient of variation (i.e. 45.37 per cent) is falls in case of grapevine production.

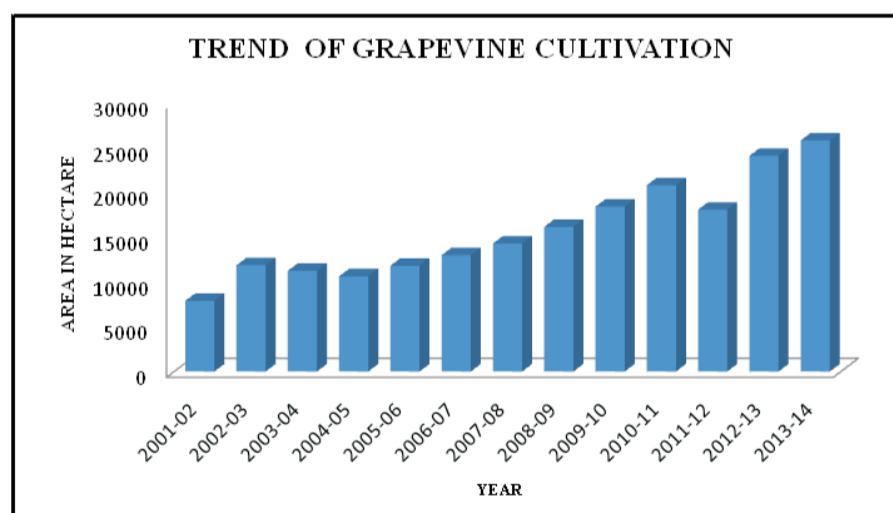


Fig .2

SPATIAL DISTRIBUTION

Sangli district is considered as the core district in Maharashtra for grape cultivation. Area under grape cultivation in 2001-02 and 2013-14 are 8264 and 30002.69 hectares in Sangli district. In general, there is an increase in the in the area under grapevine cultivation from 2001-02 to 2013-14. The tahsil level analyses reveals that there is an increase in area of Tasgaon, Miraj, Jat, Palus, Kadegaon, Atpadi, shirala and KavatheMahankaltahsil (Table 1). These five tahsils together share over 91 per cent of grape area of the district. Based on the aerial extent of grape cultivation, following zones are delimited.

Table 2: Tahsil Wise Area under Grapevine Cultivation (hectare)

Sr.No	Tahsil	2001-02	Share in %	2013-14	Share in %
1	Miraj	910	11.01	6894	22.97
2	Walva	85	1.02	858	2.85
3	Palus	N.A	N.A	2449	8.16
4	Shirala	00	00	0.69	0.002
5	KavatheMaha nkal	215	2.60	2030	6.76
6	Khanapur	2780	33.64	2557	8.52
7	Kadegaon	N.A	00	1556	5.18
8	Tasgaon	2965	35.87	9802	32.67
9	Jath	1230	14.88	3694	12.31
10	Atpadi	79	0.95	162	0.53
Total		8264	100	30002.69	100

Source: District Agriculture office, Sangli, Socio-economic Abstract 2001 & 2013.

High Concentration (> 20 per cent)

It is observed in 2001-02 the high proportion of grape cultivation in Tasgaon and Khanapur. In Khanapur tahsil situation has changed during 2013-14; area under grape cultivation is decrease due to inconsistency of rainfall. In 2013-14, the high proportion of grape cultivation observed Miraj and Tasgaon, tahsil. Tasgaon tahsil was leading tahsil comprising 9802 hectares (33.67 per cent) under grape cultivation; followed by Miraj (22.97 per cent) tahsil was leading tahsil of grape production in Sangli district. These two tahsil together share over 56.64 per cent of grape area of the district. In these area farmers have adopted the grape on commercial basis. Availability of suitable climate, well drained soil, availability of irrigation, constant efforts, innovative farmers, proper planning for cultivation practices and more lucrative than sugarcane cultivation are the important contributing factors responsible for the high percentage of grape cultivation in Sangli district.

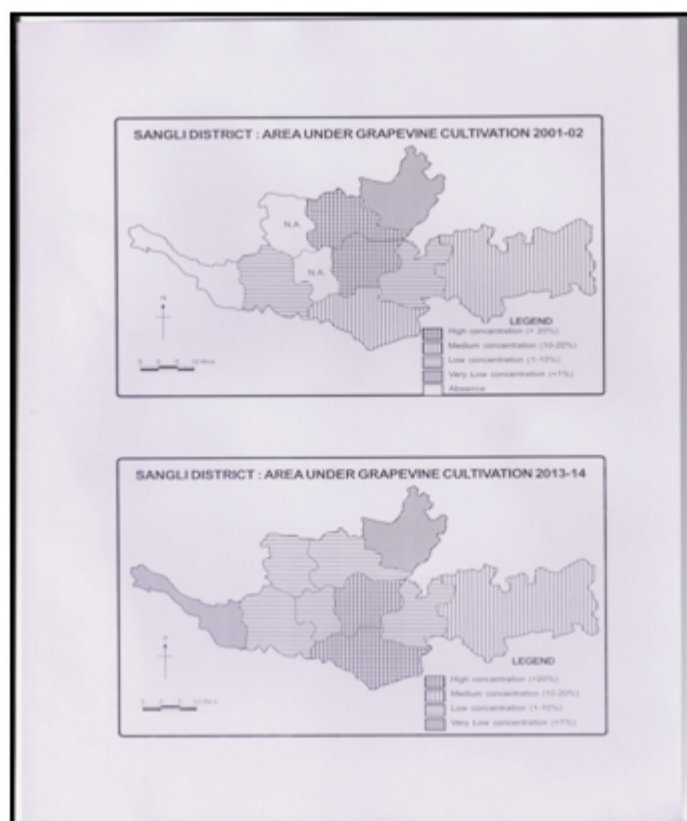


Fig 3.

Moderate Concentration (10-20 per cent)

In 2001-02 this Zone includes Jath and Miraj tahsils having 14.88 and 11.01 per cent hectares area under grape cultivation respectively. These two tahsils together share over 25.89 per cent of grape area of the district. It is observed in 2013-14 the moderate grape cultivation in Jath tahsil. Besides this suitable climate, soil, are the crucial factors contributing for the moderate proportion of grapevine cultivation in Sangli district Besides Kawathmahnkhal, Kadegoan, and Khanapur, the low and inconsistency in the rainfall and irregular source of irrigation are some of the reasons a lesser amount of grape cultivation.

Low Concentration (1-10 per cent)

In 2001-02, this zone includes Walva and Kawathmahnkhal tahsils, these two tahsils having 1.01 per cent and 2.60 per cent area of district. In 2013-14 this zone includes Palus, Kawathmahnkhal, Kadegoan, Walva and Khanapur. It is observed that the tahsil well endowed with irrigation facility from the river Krishna and Warna river. Walva tahsil have considered sugarcane producer tahsil of the district. Also whereas Walva tahsil has highest per cent of plain area with poor drained soil has affected grape cultivation. Low concentrated zone of grape cultivation in Kawathmahnkhal, Kadegaon and Khanapur due to variability of rainfall and presence of poor soils are some of the factors affecting adversely.

Very low concentration (<1 per cent)

The Zone of low hectares is mainly observed in the western and northeastern part of the district. This zone includes Shirala and Atpadi tahsil having 0.003 per cent and 0.06 per cent hectares respectively. The very high rainfall condition and undulating topography in the west affect the cultivation of grape in the tahsil of Shirala. Moreover the eastern part has the major constraint of water which leads to very low proportion of grape cultivation.

CONCLUSION

A study of agricultural setup in Sangli district, reveals that irrigation has also played an important role in the distribution of the landuse and cropping pattern of the study area. Sangli district has been in the forefront in the production of grapes. As compared to sugarcane, grape cultivation has required low water consumption and it gives more return so it is considered to be the good option for sugarcane. At the beginning of 2001-02, area under grape cultivation is 8264 hectare. It increased from 8264 hector to 30002.69 hector during 2001-02 to 2013-14 respectively with growth rate 263.5 per cent over period under consideration. Grape cultivation mainly concentrated in the central eastern part of the district. Besides the efforts made by innovative farmers in the region, favorable climatic condition, efficient and reliable marketing organizations are also some of the other contributing factors responsible for widespread and growth in area under grapevine of the region.

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