



## **Crop Combination Pattern in Jalna District (MS)**

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### **Abstract**

Crops are generally grown in combinations (Weaver, 1954). The study of crop combination of any region has gained importance in geographical study. It gives us the relative position of crops on regional scale. Farmers grow crops in varied physical and cultural condition. The pattern of crop combination gives spatial predominance of certain crops or combination resulting the emergence of crop regions. Such analysis would ultimately minimize the chances of oversimplified generalization (Ali, Mohamad, 1978).

The study reveals that one tahsil has monoculture, four tahsils have two crop combinations and each one tahsil has three, four and five crop combinations in the year 1995-96. In the year 2015-16, monoculture region is not observed any tahsil of the district, the decrease in two crop combination and increase six and seven crops combinations reflect a clear trend towards the complexity of crop combination. Jowar is the dominant crop in the district, the crop combination regions indicate the direct impact of rainfall, soil and irrigation facilities.

**Keywords-** crop combination, monoculture, least deviation method

**Abbreviations-** J: Jowar, W: Wheat, Sc: Sugarcane, C: Cotton, G: Gram, Sn: Sunflower,

### **Introduction**

The study of crop combination regions constitutes an important aspect of agricultural geography as it provides a good basis for agricultural regionalization. The crops are generally grown in combinations and it is rarely that a particular crop occupies a position of total isolation other crops in a given areal unit at a given point of time. In recent years the concept of crop combination has engaged the attention of geographers and agricultural land use planners. The studies made so far in this field range in approach from topical to regional and vary in extent from small areas of minor political units to the entire country. An attempt is made here to study the crop combination regions of Jalna district

**Study Area:**

Jalna district is approximately situated at the central part of the Maharashtra state of Republic of India and northern direction of Marathwada region specially district lies between 19°01' North to 21°03' North latitudes and 75°04' East to 76°04' East Longitude. Jalna district erstwhile a part of Aurangabad district was formed on 1<sup>st</sup> May, 1981 by carving out Jalna, Bhokardan, Jafrabad and Ambad tahsils of Aurangabad district and Partur tahsil of Parbhani district. The boundaries of Jalna are adjacent to Parbhani and Buldhana on east, Aurangabad on west, Jalgaon on north and Beed on South. Jalna district covers an area of 7,612 sq.km which is 2.47 percent of the total state area, and has population of 19,59,046 as per 2011 census. Recently Jalna district is divided into eight tahsils for administrations these are Jalna, Ambad, Bhokardan, Jafrabad, Badnapur, Partur, Mantha and Ghansawangi.

**Objectives**

1. To study on the spatio-temporal changes in crop combination regions of the district.
2. To study the newly entered and disappeared crops in crop combination during the period under study.
3. To analyze the percentage of crop in crop combination of study region.

**Database and Methodology**

The present study is based on the secondary data, for the period 1995-96 and 2015-16. Seven crops are selected for the study. Data has been derived from the socio-economic review of the Jalna district. Tahsil is the basic unit for investigation. The crop data has been computed with the help of weaver's technique of crop combination.

Which is expressed as:

$$\text{Standard deviation}(\delta) = \frac{\overline{d^2}}{n}$$

Where

d- is the sum of the square of individual deviations

n- is the number of crops in a given combination.

The result of the crop combination is presented by the choropleth method.

Table No. 1

**Crop combination regions based a weaver's method (1995-96)**

Sr No.	Tahsil	No. of Crops	Crop Combination
1	Bhokardan	3	J C B
2	Joffrabad	3	J B C
3	Jalna	4	J C B M
4	Badhapur	4	J C B W
5	Ambad	5	J C W Sn M
6	Ghansawangi	5	J C W Sc Sn
7	Partur	4	J C W Sc
8	Mantha	3	J C B

Source: Calculated by researcher

Table No.1 shows crop combination pattern in the study region. The Jowar is the dominant crop, the largest coverage of Jowar stands as first, followed by Bajara, wheat, cotton, maize, sugarcane, sunflower and gram. Five crop region shows in Ambad and Ghansawangi tahsil, Four crop combination have seen in Jalna, Badhapur, Partur tahsil, where as three crop combination have seen in Bhokardan, Joffrabad, Mantha tahsil .

Table No. 2

**Crop combination regions based a weaver's method (2015-16)**

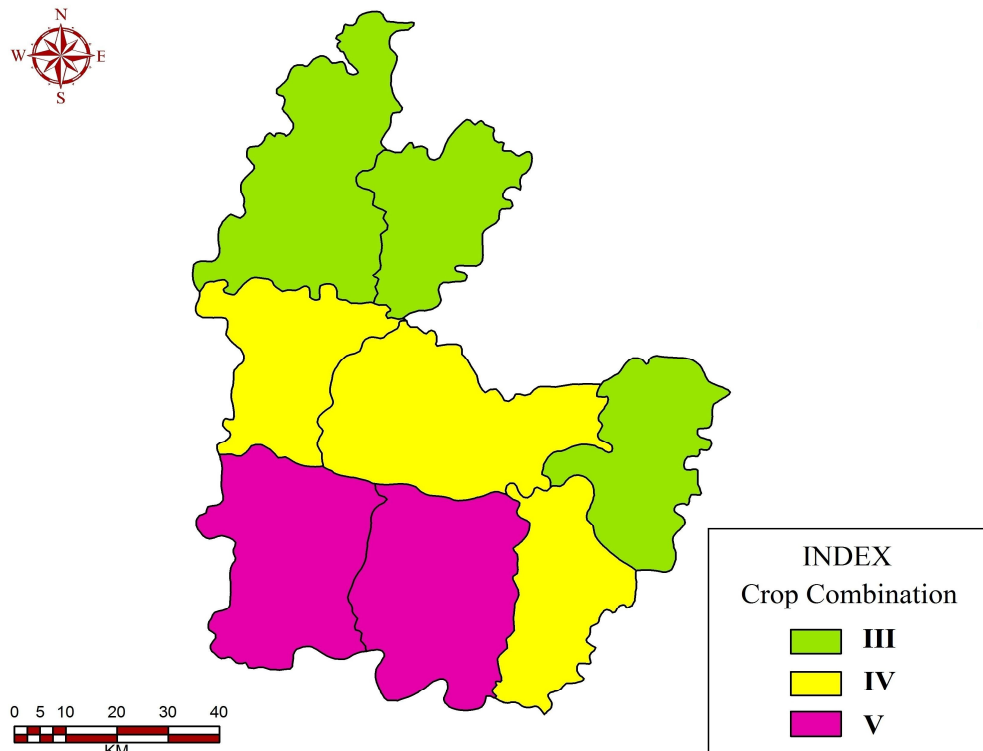
Sr No.	Tahsil	No. of Crops	Crop Combination
1	Bhokardan	5	J C B M Sn
2	Jofrabad	5	J B C G Sn
3	Jalna	6	J C M Sc Sn M
4	Badhapur	6	J C B W M G
5	Ambad	7	J C B W Sc Sn G
6	Ghansawangi	7	J C W Sc Sn G M
7	Partur	6	J C W Sc M G
8	Mantha	5	J C B M Sn

Source: Calculated by researcher

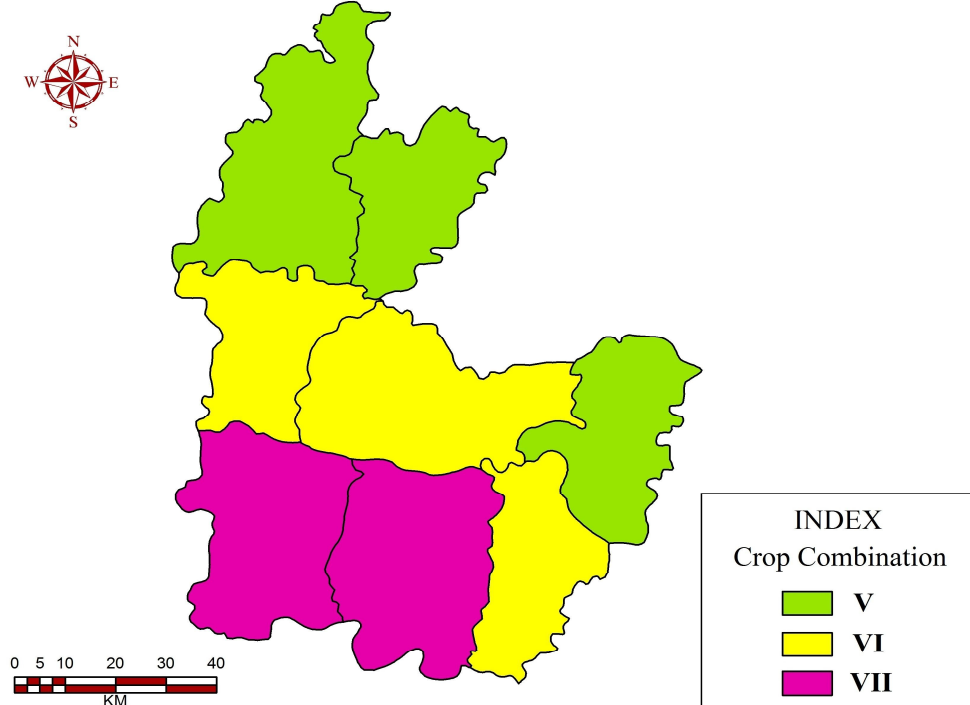
Table No. 2 Monoculture regions is not found any tahsil of the Jalna district in the year 2015-16. Five crop combination found in Bhokardan, Jofrabad , Mantha tahsil. Whereas six crop combination have seen in Jalna , Badhapur, Partur tahsil. Highest seven crop combination have noticed in Ambad and Ghansawangi tahsil In this tahsils have well irrigation facilities and black soil.



Crop combination regions based a weav-er's method (1995-96)



Crop combination regions based a weav-er's method (2015-16)





## Conclusion

In the Jalna district cropping pattern is complex, In the year 2005-06 highest five crop combination have recorded and in the next time period 2015-16 seven crops combination have recorded. Crops are associated with one another. crops combinations, reflects a clear trend towards the complexity of crop combination create emphasis on these crops. Irrigation, Transport, fertilizer, seeds make huge impacts on cropping pattern in the study region.

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