

**PATTERN OF CROP CONCENTRATION IN MANDYA DISTRICT**

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**ABSTRACT**

In the present paper the cropping pattern in Mandya district is outlined, followed by the discussion on the area under individual crops. Bhatia's method is used for concentration of selected crops. In this paper an attempt is made to study the changes in crop concentration in the study region. There has been a significant variation in the area patterns of the crop concentration in the study region. The indices of crop concentration area calculated for year 2008-09 given in the (table 1).The spatial variations in the degree of crop concentration area are found to be the result of the different interaction such as physiographic, climatic, hydrological, socio-economic and technological factors in organizational of an area.

**KEYWORDS:** Cropping Pattern, Crop Concentration Index

**INTRODUCTION**

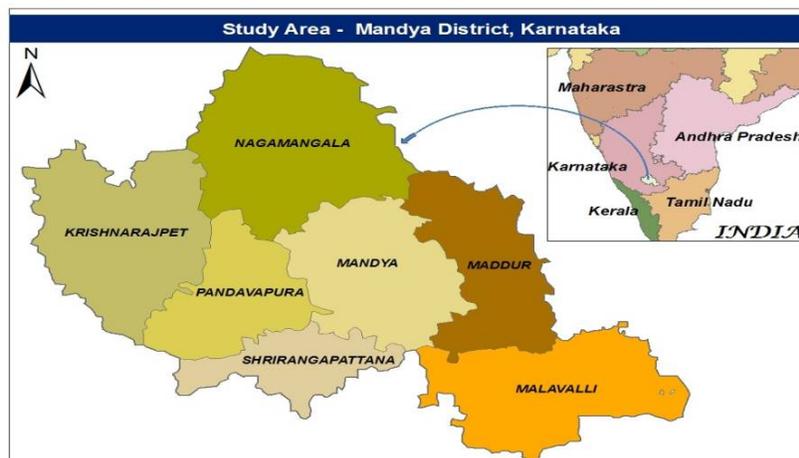
Cropping pattern is the proportion of area under various crops at a point of as it changes over space and time. The cropping patterns of a region are closely influenced by the geo-climatic, socio-economic, historical and political factors (Hussain, M. 1996) patterns of crop land use of a region are manifestation of combined influence of physical and human environment. Differences in attitude towards the rural land in the level of prosperity and technology have produced changes in emphasis. Their effects on both landscape and land use studies are likely to be far reaching (Coppock, 1968). Weather plays a decisive role in determining the existing cropping pattern. Cropping pattern is also depending on terrain, topography, slope, soils and availability of water for irrigation use of pesticides, fertilizers and mechanization. In the simple word cropping pattern means the production of area under various crops at a point of time. It is a dynamic concept because no cropping pattern can be said to be ideal for all times to a particular region. It changes in space and time with a view to meet requirements and is governed largely by the physical as well as cultural and technological factors. The change in cropping pattern in particular span of time clearly indicates the changes that have taken place in the agricultural development. These changes are brought about by socioeconomic influence.

The various geographers applied location quotient method to work out degree of the crop concentration in specific study region. Crop concentration means areal density of individual crop or crop concentration reveals the variation in the density of any crop in a given region at a point of time (Chouhan, 1987). The geographers pioneer work of Florence (1948), Chisholm (1962), Bhatia (1965), Jasbir Singh (1976) these are the contributors to mark the agricultural region with the help of the quotient method.

### **Study area:**

Mandya District has become one of the agriculturally predominant districts in Karnataka state after introduction of the irrigation system from the KrishnarajaSagar reservoir. With the timely adoption of improved farm mechanization, there was substantially marked transformation in cropping pattern, composition of crops, better grown yield level, ultimately leading to better economic conditions of the people. Hence a study was conducted to assess the status of agriculture mechanization and propose strategies to improve agriculture practices.

Mandya district lies between 76° 19' and 77° 20' East Longitude and 12° 13' and 13° 04' North Latitude. The district receives an average annual rainfall of 700 mm. The climate of the district comprises of moderate summers (Max 35°C) and moderate winters (Min 20°C).Mandya district comprises of 7 taluks. The total geographical area of the district is 4,98,244 Ha, out of which 2,53,067 Ha forms the sown area. More than half of the total land area in the district is put to agricultural use. Total irrigated area is 1,16,901 Ha out of which around 88,000 ha is being irrigated by K.R.Sagar and around 16,000 Ha by Hemavathi reservoir. The rest of the land is irrigated by other sources like tanks, wells and borewells. With a total population of 19.25 lakhs, around 5 lakh people are employed in the Agriculture Sector.



**Objective**

- 1) To identify areas of crop concentration on the basis of Bhatia’s method.
- 2) To study the crop concentrations in Mandya district during 2008-2009.

**Database and Methodology**

For the clear cut picture of the study of patterns of land utilization, cropping patterns is made with the help of secondary data obtained from Socio-Economic Abstract of Mandya District. In order to determine the taluk wise concentration of crops Bhatia’s method is used for the calculation of the location quotient. The following formula is used to work out the concentration of crop in Mandya district.

$$\begin{array}{rcc}
 \text{Index for Determining} & \text{Area of crop 'a' in the component} & \text{Area of crop 'a' in the} \\
 \text{Concentration of} & \text{Areal unit (Taluk)} & \text{entire (district)} \\
 \text{-----} & \text{-----} & \text{-----} \\
 \text{Crop 'a'} & \text{Area of all crop 'a' in the} & \text{Area of all crops 'a' in the} \\
 & \text{Component Areal unit (Taluk)} & \text{entire region (district)}
 \end{array}
 = \frac{\quad}{\quad} \div \frac{\quad}{\quad}$$

Higher the index value of a crop concentration indicates that higher is the area under that crop. This would give us an idea about the level of concentration of crop.

This method is accepted in the present study it is adopted here at the year 2008-2009 has been categorized in three classes, viz. i) High, ii) Medium, iii) Low crop Concentration. Using the GIS software a choropleth map has been drawn based on the above classes.

**Results and Discussion:**

Crop Concentration refers to the density or areal occupancy of a crop in a region. The occupancy (High, Medium and Low) is determined by the terrain and climate including temperature, humidity, transport facilities and demand of the crop.

**Paddy:**

One of the remarkable features of Paddy concentration in the district is that it has not crosses high concentration. Paddy crop was medium in the region except Nagmangala and Pandavapura (map-1) which was low.

**Maize:**

Maize was high only in Malavalli. Remaining regions were at the rate of low. No taluks are in the found in the (map-1) rate of Medium.

**Ragi:**

Table-1 and map-1 shows that high to moderate level of ragi concentration was found in Nagamangala taluk. Medium in Maddur, Pandavapura and K R Pet and low in Malavalli, Mandya and Srirangapatna.

**Sugarcane:**

High to moderate level of sugarcane concentration was showed High in Mandya taluk, medium in Maddur, Pandavapura and Srirangapatna. While low was noticed in Nagamangala, K R Pet and Malavalli (map-1).

**Pulses:**

Table -1 and map- 1 exhibits that Pulses concentration in the district is that it has not crosses high concentration. Pulses were low only in Maddur and Srirangapatna. Rest of the region was medium.

**Fruits:**

It is clear from map-1 and table-1 that fruits crop concentration was recorded in low in Mandya and Pandavapura, remaining taluks K R Pet, Maddur, Malavalli, Nagamangala and Srirangapatna had medium crop Concentration. No taluks are in the found in the rate of High.

**Vegetables:**

Vegetables was high concentration in Nagamangala, medium in Srirangapatna and rest taluks K R Pet, Maddur, Malavalli, Mandya and Pandavapura (map-1) in the low crop Concentration.

**Oilseeds:**

Oil seeds were high concentration in Nagamangala, medium in K R Pet and Malavalli. While Maddur, Mandya, Pandavapura and Srirangapatna (map-1) in the low Crop Concentration.

**Conclusion:**

Crop Concentration of various crops was studied in seven taluks of Mandya District like K R Pet, Maddur, Malavalli, Mandya, Nagamangala, Pandavapura and Srirangapatna during the year of 2008-2009. This Crop Concentration is categorized under three sections has Low (Below 0.90), Medium (0.91-1.80) and High (Above 1.81).

Nagamangala has high Crop Concentration with crop like Ragi, Vegetables and Oil seeds. Mandya is majorly concentrated in Sugar Cane and Malavalli on Maize. Particular Mandya District, Paddy is the most dominant crop, but no taluks founded in high Crop Concentration.

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**Table 1- Taluk wise Crop Concentration in Mandya District (2008-09)**

Sl.NO	Taluk	Paddy	Maize	Ragi	Sugar Cane	Pulsus	Fruits	Vegetables	Oil Seeds
1	<b>K.R. Pet</b>	1.20	0.37	1.08	0.47	1.01	1.53	0.63	0.95
2	<b>Maddur</b>	1.19	0.07	0.92	1.26	0.78	1.09	0.23	0.70
3	<b>Malavalli</b>	0.95	6.71	0.77	0.57	1.02	1.55	0.41	1.59
4	<b>Mandya</b>	1.04	0.05	0.69	1.83	1.11	0.47	0.74	0.46
5	<b>Nagamangala</b>	0.31	0.01	1.93	0.01	1.30	1.03	2.77	1.98
6	<b>Pandavapura</b>	0.90	0.00	0.96	1.69	0.96	0.34	0.83	0.68
7	<b>Srirangapatna</b>	1.70	0.04	0.37	1.24	0.60	1.02	1.62	0.55

*Map 1- Taluk wise Crop Concentration in Mandya District (2008-09)*

