

# TRENDS IN PRODUCTION OF COTTON IN HARYANA (1966-2012) Sanjay Kumar\*

**Abstract:** In the present paper an attempt has been made to study the trends in production of cotton in Haryana from 1966-67 to 2011-2012. The area under cotton in Haryana has increased significantly over the period of time from 1966 to 2012. The increase or decrease in the production of cotton is a function of change in the acreage and yield of cotton. It also emphasis on the spatial pattern of cotton yields in the state. Haryana is one of the leading states in terms of cotton production. The wide diversity of soil topography, temperature and precipitation found in Haryana permits growing of a wide range of crops. They includes cotton, rice, bajra, guar, and some fodder crops in kharif season, The state is producing medium analytic of cotton, rice and other crops. New Bt cotton and some new variety of rice, holds great potential for increasing the production. In order to examine the trends in production of cotton in the state, the triennium averages have been computed for the periods 1966-69, 1982-85 and 2009-12. Haryana has recorded almost many fold increase in the cotton production as per the data available it has increased from 50 thousand tonnes to 2050 thousand tonnes during the study period. In fact, over the period 1966-67 to 1982-85 alone, the cotton production has increased by more than 10 times.

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#### **INTRODUCTION**

Cotton industry in Haryana has become an integral part of socio-economic development of rural masses in some districts. The era of prosperity, in fact, was initiated through the production of cotton. Sandhu and Chhabra (2001).

Some districts of Haryana are bestowed with suitable agro-climatic conditions for the production of cotton. The state has a scarcity of arable land and yields of traditional food grains are low due to geographical conditions, lack of irrigation and mechanisation of the fields. The practice of cotton as a suitable agro-ecological strategy, cotton plants provide green cover to the soil and act as soil binders, preventing soil erosion and retaining nutrients. But amongst all the other kharif crops second after rice, cotton occupies a dominant position in terms of area, production and yields prior to independence, there were hardly any attempt to develop cotton cultivation in Haryana. Kumar and Patel (2001).





# **STUDY AREA**

The study area is the state of Haryana as the following map shows the district boundaries and the cotton growing area. Extending over an area of about 44,212 square Km. from 27°39'5"N to 30°55'5"N latitudes and 70°27'E" to 77°36'5"E longitudes. Haryana is situated in the north-western part of the Indian Union and is bounded by Himachal Pradesh in the north, Uttar Pradesh and Delhi in the east and by Punjab and Chandigarh on the northwest. It shares the boundaries with the great expanse of Rajasthan in the Southwest. In terms of Physical features, it is bordered in the northeast by the Shiwalik hills and in the east by the Yamuna river. The dry semi-arid region in the southwest and the west is penetrated by the Aravalli ranges, which find extension in the parts of Gurgaon, Mahendergarh, Rewari, Bhiwani and Jhajjar districts. In the north, the seasonal Ghaggar river forms part of the boundary between Punjab and Haryana.

# **OBJECTIVES OF THE STUDY**

The present study proposes to realise the following objectives:

- 1. To study the trends in the production of cotton in Haryana.
- 2. To examine the temporal and spatial variations in the production of cotton.

#### METHODOLOGY

The present study is based on secondary data. The district wise data related to various aspects of production of cotton have been collected from various sources. The data relating to the production of cotton have been collected from Department of Agriculture, Panchkula for three periods of time. In order to examine the temporal and spatial variations in the production, the triennium average of production of cotton has been computed for the periods 1966-69, 1982-85 and 2009-12.

The maps have been prepared with the help of choropleth mapping technique. The spatial pattern of production of cotton in Haryana is shown with choropleth map. The present study evaluates the trends in the production and yield of cotton grown in Haryana. The data have been collected from Department of Agriculture, Panchkula for three period of time and triennium averages shown with the help of tables, whereas yield level of cotton has been shown by choropleth method. The spatial pattern of production of cotton in Haryana during the study period is shown differently in the maps with the averages of core area, periphery area and the rest of state.



#### TRENDS IN PRODUCTION OF COTTON:

The Production of cotton increased quite rapidly in the state during last few decades. It is evident from fig.3.2 that over the period 1966 to 2012, Haryana has recorded almost many fold increase in the cotton production. It has increased from 50 thousand tonnes to 2050 thousand tonnes during the study period. In fact, over the period 1966-67 to 1982-85 alone, the cotton production increased by more than 10 times.

Fig. 3.2 shows there was a sudden fall in cotton production during 1985-86. After that there is fluctuating trends in the production of cotton. But it reaches on its peak during 2004-05 with 2050 thousand tones production of cotton in the state. The core area has significant growth in cotton production and periphery area has also an increasing trend in the production of cotton but its growth rate is less than the core area.

#### DISTRICT WISE TREND OF PRODUCTION IN CORE AREA

Fig. 3.3 depicts district wise trend in production of cotton in core area (i.e. Hisar, sirsa and Fatehabad district). The cotton production has been subjected to temporal fluctuation in the state. Hisar was the only district in core cotton growing area. And its production increased continuously before the formation of Sirsa as a district Hisar and Sirsa districts had an increasing trend in cotton production till 1994-95. After that Fatehabad emerged as one of the new district in core area.

In 1982-85 core area had been split into Hisar and Sirsa districts which experienced 83.39 percent of cotton to total cotton production in Haryana. Further core area was split into Hisar, Sirsa and Fatehabad districts with little increased of cotton production up to 82.07 percent during 2009-12. While Periphery area which includes Bhiwani, Jind & Rohtak districts has recorded only 16.45 percent of cotton to total production of cotton in Haryana. Rest of state has proved a declining pattern in cotton production which was 8.17 percent of cotton in 1966-69, declined to 1.48 percent during 2009-12.

# DISTRICT WISE PRODUCTION OF COTTON IN THE STATE

The table 3.1 shows district wise production of cotton in Haryana. The production of cotton in the state increased consistently over the last four decades. The production of cotton in Haryana increased rapidly following the green revolution. It is evident from the table that core area had 267.36 thousand tonnes of cotton production during 1966-69 out of which 162.83 thousand tonnes was American cotton where as 104.53 thousand tonnes was Desi



cotton. Over the period 1982-85 core area had 559.33 thousand tonnes of cotton production, which include 453.33 thousand tonnes of American cotton and 106 thousand tonnes of Desi cotton in the region. Core area had 1719.67 thousand tonnes of cotton production during 2009-12 with 1675.33 thousand tonnes of American cotton and 44.33 thousand tonnes Desi Cotton in district. Whereas periphery area had only 38.18 thousand tonnes of cotton production during 1966-69 which include 11.22 thousand tonnes of American cotton and 26.96 thousand tonnes of Desi cotton. Over the period 2009-12 periphery area had 344.67 thousand tonnes of cotton production. Which include 332.00 thousand tonnes of American cotton and 12.67 thousand tonnes of Desi cotton in the region and production of Desi cotton is on the decreasing trend. Cotton productivity In Haryana are measured using crop yield and concentration index of ranking co-efficient. Singh (1972).

# **RELATIVE PROPORTION OF AMERICAN AND DESI COTTON**

Table 3.2 above reveals the relative proportion of American and Desi cotton production in the state. In 1966-69 Hisar district had 60.90 and 39.10 proportion of American and Desi cotton production respectively. In 1982-85 Hisar had 84.99 percent of American and 15.01 percent of Desi cotton, whereas Sirsa had 74.31 and 25.69 proportion of American and Desi cotton respectively and shows an increasing trend during the study period. The table indicates that Hisar had 98.41 and 1.59 percentage proportion of American and Desi cotton respectively during 2009-12 and Sirsa and Fatehabad districts also had almost the same proportion of American and desi cotton.

#### **SPATIAL PATTERN OF PRODUCTION OF COTTON:**

The spatial pattern of production of cotton in Haryana during 1966-69, 1982-85 and 2009-12 is shown differently in the maps with the averages of core area, periphery area and the rest of state on the following page, followed by fig. 3.4 which shows the spatial pattern of production of cotton in Haryana during the study period. Core area had more than 80.36 percent of cotton production during 1966-69. Periphery area included Jind, Bhiwani and Rohtak district alone had more than 11.47 percent of cotton production in 1966-69 and rest of state average was 8.17 per cent of cotton production.

Further it shows that core area (which included Hisar and Sirsa districts) had 83.39 per cent of cotton production during 1982-85 and periphery area (Jind and Bhiwani) had just 13.41



per cent production of cotton. Rest of state included Ambala, Kurukshetra, Karnal, Sonipat, Rohtak and Mahendergarh districts had below 5 percent of cotton production during 1982-85. The districts of Gurgaon and Faridabad had almost no cotton during the said period.

In 2009-12 the core area constitutes 82.66 percent of cotton production and the periphery area had 16.16 Percent of cotton production during the period and rest of state's average was from Bhiwani, Mahendergarh, Jhajjar and Rewari district, there was negligible production of cotton in the districts of Ambala, Panchkula, Yamunangar, Kurukshetra, Karnal, Panipat Sonipat, Faridabad and Gurgaon districts.

# CONCLUSION

The study shows, that during 1966-69 the American cotton proportion was more than 60 percent but it increased to 90 percent during the study period. And the proportion of Desi cotton decreased (in core area) from 39 percent to merely 2.58percent during the period. In Periphery area district Jind had 26.39 percent of American and 70.61 percent of Desi cotton during 1966-69, whereas Rohtak had 31.77 and 68.23 proportion of American and Desi cotton respectively. In 1982-85 Bhiwani had 88.29 and 11.71 proportion of American and Desi cotton respectively whereas Jind and Rohtak had 56.93, 62.11 and 43.07, 37.89 proportion of American and Desi cotton production. Rohtak was the only district in the periphery area that had approximately 6 percent production of Desi cotton. Core and periphery area both have an increasing trend towards American cotton production during the study period, which increased up to 96 percent (American cotton) whereas Desi cotton production decreased up to 2.58 and 3.68 percent respectively in core and periphery areas during the study period.

Rest of the state has also similar trend towards the proportion of American and Desi cotton production, in 1966-69 rest of state had 54.66 percent and 45.44 percent of American and Desi cotton respectively. American cotton production increased to 94.62 percent whereas it was merely 5.38 percent in respect of Desi cotton during 2009-12. We can say in nutshell that american cotton has bright future in the state whereas desi cotton is going to be extinct with the passage of time.

High temperatures and light intensity, Wind velocity and sandy soils coupled with scanty rains, favour higher transpiration rate and produce drought like conditions in southern



Haryana. And for irrigation, in some other districts of state depend mainly on canals which cannot be considered as assured source because of their interrupted and irregular supply. Therefore cotton has concentrate only in core and periphery areas so the farmers are shifting from Desi cotton to American cotton because the yield is increasing in American cotton and decreasing in Desi cotton.

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Table 3	3.1
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<b>C</b>	DISTRICT	Districtwise Production of Cotton in Haryana (000' Tones)								
Sr.		1966-69			1982-85			2009-2012		
INO.		AMERICAN	DESI	TOTAL	AMERICAN	DESI	TOTAL	AMERICAN	DESI	TOTAL
1	HISAR	162.83	104.53	267.36	300.00	53.00	353.00	516.67	8.33	525.00
2	SIRSA	0.00	0.00	0.00	153.33	53.00	206.33	796.67	24.33	821.00
3	FATEHABAD	0.00	0.00	0.00	0.00	0.00	0.00	362.00	11.67	373.67
CORE AREA		162.83	104.53	267.36	453.33	106	559.33	1675.33	44.33	1719.67
4	BHIWANI	0.00	0.00	0.00	32.66	4.33	36.99	179.67	6.00	185.67
5	JIND	5.06	13.73	18.79	24.66	18.66	43.32	131.33	5.33	136.67
6	ROHTAK	6.16	13.23	19.39	6.00	3.66	9.66	21.00	1.33	22.33
PERIPHERY AREA		11.22	26.96	38.18	63.32	26.65	89.97	332.00	12.67	344.67
ΤΟΤΑ	L (C&P)	174.05	131.49	305.54	516.65	132.65	649.30	2007.33	57.00	2064.33
7	GURGAON	0.90	0.83	1.73	0.00	0.00	0.00	0.00	0.00	0.00
8	KARNAL	12.80	9.40	22.20	0.00	4.33	4.33	0.00	0.00	0.00
9	AMBALA	1.13	1.76	2.89	0.00	4.00	4.00	0.00	0.00	0.00
10	MOHINDERGARH	0.00	0.36	0.36	0.00	0.10	0.10	3.67	0.00	3.67
11	FARIDABAD	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
12	KURUKSHETRA	0.00	0.00	0.00	3.33	6.00	9.33	0.00	0.00	0.00
13	SONIPAT	0.00	0.00	0.00	0.66	3.00	3.66	1.33	0.67	2.00
14	PANCHKULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	YAMUNANAGAR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	KAITHAL	0.00	0.00	0.00	0.00	0.00	0.00	20.00	1.00	21.00
17	PANIPAT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	JHAJJAR	0.00	0.00	0.00	0.00	0.00	0.00	2.33	0.00	2.33
19	REWARI	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	3.00
20	MEWAT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	PALWAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REST	OF HARYANA	14.83	12.35	27.18	4.99	17.43	21.42	29.33	1.67	31.00
STAT	E AVERAGE	188.88	143.84	332.72	521.64	150.08	670.72	2036.67	58.67	2095.33



6	DISTRICT	Relative Proportion of American and Desi Cotton Production							
Sr.		1966-1969		1982-1	.985	2009-2012			
NO.		AMERICAN	DESI	AMERICAN	DESI	AMERICAN	DESI		
1	HISAR	60.90	39.10	84.99	15.01	98.41	1.59		
2	SIRSA	0.00	0.00	74.31	25.69	97.04	2.96		
3	FATEHABAD	0.00	0.00	0.00	0.00	96.88	3.12		
CORE AREA		60.90	39.10	81.05	18.95	97.42	2.58		
4	BHIWANI	0.00	0.00	88.29	11.71	96.77	3.23		
5	JIND	26.93	73.07	56.93	43.07	96.10	3.90		
6	ROHTAK	31.77	68.23	62.11	37.89	94.03	5.97		
PERIPHERY AREA		29.39	70.61	70.38	29.62	96.32	3.68		
ΤΟΤΑ	L (C&P)	56.96	43.04	79.57	20.43	97.24	2.76		
7	GURGAON	52.02	47.98	0.00	0.00	0.00	0.00		
8	KARNAL	57.66	42.34	0.00	100.00	0.00	0.00		
9	AMBALA	39.10	60.90	0.00	100.00	0.00	0.00		
10	MOHINDERGARH	0.00	100.00	0.00	100.00	100.00	0.00		
11	FARIDABAD	0.00	0.00	0.00	0.00	0.00	0.00		
12	KURUKSHETRA	0.00	0.00	35.69	64.31	0.00	0.00		
13	SONIPAT	0.00	0.00	18.03	81.97	66.67	33.33		
14	PANCHKULA	0.00	0.00	0.00	0.00	0.00	0.00		
15	YAMUNANAGAR	0.00	0.00	0.00	0.00	0.00	0.00		
16	KAITHAL	0.00	0.00	0.00	0.00	95.24	4.76		
17	PANIPAT	0.00	0.00	0.00	0.00	0.00	0.00		
18	JHAJJAR	0.00	0.00	0.00	0.00	100.00	0.00		
19	REWARI	0.00	0.00	0.00	0.00	66.67	33.33		
20	MEWAT	0.00	0.00	0.00	0.00	0.00	0.00		
21	PALWAL	0.00	0.00	0.00	0.00	0.00	0.00		
REST	OF HARYANA	54.56	45.44	23.30	81.37	94.62	5.38		
STAT	E AVERAGE	56.77	43.23	77.77	22.38	97.20	2.80		

Table 3.2





Fig – 3.4