

## CHANGING PATTERN OF COTTON CULTIVATION IN HARYANA

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### Abstract

Haryana has a long history of cotton production and was once a major cotton producing region. In fact, the handloom industry of Panipat evolved in Haryana, because of cotton is being grown here. Within Haryana, Hisar district is known as the main cotton growing region. However, Haryana has been losing its area under cotton cultivation, thereby losing an opportunity to improve the income potential for farmers in the state. India is today standing as the second largest grower and largest exporter of cotton in the world. In spite of Haryana's rich history of cotton growing center, the cotton industry would be thriving. This is due mainly to the increasing demand of food grain of the rapidly increasing population, unreliability of rainfall, Unreliable production, its sensitivity to diseases, high production cost and poor agricultural planning and so on. All these factors are responsible for the decreasing area under cotton cultivation. Most of the cotton producing belt is now under food grain cultivation or under other uses.

**Keywords:** Cotton, Handloom, Production, Yield, Diseases, Increase, Decrease, Exporter, Producer, Food grain, Insecticides, Pesticides, Unreliability and so on.

### Study Area

Study area for the present study "*Changing Pattern of Cotton Cultivation in Haryana.*" is whole Haryana state. The small state Haryana was founded in November 1966 when the former state Punjab was divided into Haryana and modern Punjab. Haryana is situated between 27° 39' to 30° 35' north latitudes and 74° 28' to 77° 36' east longitudes. It is located in the northern part of India. It is bounded by Uttar Pradesh in east, Punjab in north, Himachal Pradesh in north-east and Rajasthan in west and south. Total geographical area of the study area is 4420000 hectares, which is only 1.4 per cent of the geographical area of the country. The altitude of Haryana varies between 200 meters to 1200 meters above mean sea level. According to Forest Report of India (FSI, 2013), the forest cover in the state is 1586 square kilometers which is 3.59 per cent of the state's geographical area and the tree cover is 1282 square kilometers which is 2.90 per cent of the geographical area. The Yamuna-Ghaggar plain in the east and north, the Shivalik Hill in the north-east, semi-desert sandy plain to the south-west and the Aravali Range in the south are the four major geographical features of Haryana state. The Yamuna is the only perennial river flow along the eastern boundary of the state. The Ghaggar and Markanda are seasonal rivers of the state originated from the Himalaya, while, Indori, Dohan, Kasavati originated from the Aravalis. All these are the

tributaries of ancient Sarasvati River which has now disappeared.

**Objectives of the Study:** The present study of cotton cultivation in Haryana has following objectives: -

1. To show area under cotton cultivation after green revolution in Haryana.
2. To show major cotton producing area in Haryana.
3. To show the change in cotton production and yield in Haryana.

The study area experiences semi-arid type of climate with average rainfall of 355 mm. Here summer is extremely hot. Temperature during summer occasionally reaches to 50°C, while it down to freezing point in winter. In the study-area 3700000 hectares is cultivable, which account for 84 per cent of the total geographical area out of which 3640000 hectares i.e 98 per cent is under cultivation. The gross cropped area of the state is 6510000 hectares and net cropped area is 3640000 hectares with a cropping intensity of 184.91 per cent (Agriculture Ministry Government of India). There are three crop system in Haryana named rabi, kharif and Zaid. Cotton is the main cash crop the region which is grown in kharif season. In year 2015-16 about 601800 hectares area was under cotton cultivation which was fifth in India. During this season 2621 thousand bales of 170 kilograms, cotton has been produced with yield of 739 kilograms per hectare. Area under cotton cultivation, its production and yield are shown in the following Table-1.

**Table-1: Area under Cotton Crop, Cotton Production and Yield of Cotton In Haryana 1966-67 to 2015-16**

Years	American			Desi			Total		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
1966-67	81.0	134	300	102.0	153	289	183.0	288	267
1970-71	88.6	188	359	104.8	185	299	193.4	373	328
1975-76	108.3	214	340	146.7	251	290	255.0	465	310
1980-81	211.6	480	387	104.6	163	264	316.2	643	346
1985-86	262.3	622	402	81.8	123	255	344.1	745	367
1990-91	421.6	1042	421	69.0	113	278	490.6	1155	420
1995-96	490.3	986	342	161.5	298	313	651.8	1284	335
2000-01	394.1	1081	466	161.3	302	319	555.4	1383	424
2005-06	478.3	1267	479	105.5	285	380	583.8	1552	437
2010-11	470.1	1692	612	23.2	55	407	493.3	1747	510
2015-16	583.4	2578	750	18.4	44	416	601.8	2621	739

Area in Thousand Hectares, Production in Thousand Bales of 170 Kg., Yield in Kg /hectare.

Source: Statistical Abstract of Haryana 2015-16.

In year 1966-67 in Haryana 183 thousand hectares land was under cotton cultivation on which about 373 thousand bales of the cotton were produced with the yield of 267 kg/hectare. In this year production and area under Desi cotton was more than that of area under American cotton. In 1970-71 cotton cultivated area was 194 thousand hectares in Haryana out of which about 105 thousand hectares area was under Desi variety and rest was under American cotton cultivation while both these variety had 373 thousand bales of cotton in Haryana.

In years 1980-81 total area under cotton cultivation was 316200 hectares. In this year first times the area under American cotton was double than Desi cotton. During this period about 643 thousand bales of cotton was produced with two yields of 346 kg per hectares. In 1985-86 area under American cotton was three times than that of area under Desi cotton. Total 344 thousand hectares area under cotton produced 745 thousand bales of cotton.

In year 1990-91 the cotton crop has grown over an area of 490.6 thousand hectares. Out of this only 69 thousand hectares area was under Desi cotton and rest 421.6 thousand hectares was under its American variety. In this year first time the yield of cotton crop exceeded for 100 kg per hectare and cotton first time cross the 1000 thousand mark which was 1145 thousand bales in early nineties. From the green revolution to 1995-96 cotton cultivated area in Haryana show considerable increase

which was 651 thousand hectares. This is the highest area under cotton cultivation in Haryana so far. After this milestone there is a slow decrease in area under this cash crop. This decrease is due to increasing demand of land for food grain production and other human use of cultivable land. After 1995-96 economic input in this crop increased rapidly in the form of high yielding variety seeds, fertilizers and pesticides. Consequently, the economic output decreased in cotton crop that is why the area under this crop started decreasing and this area occupied by rice cultivation in Haryana.

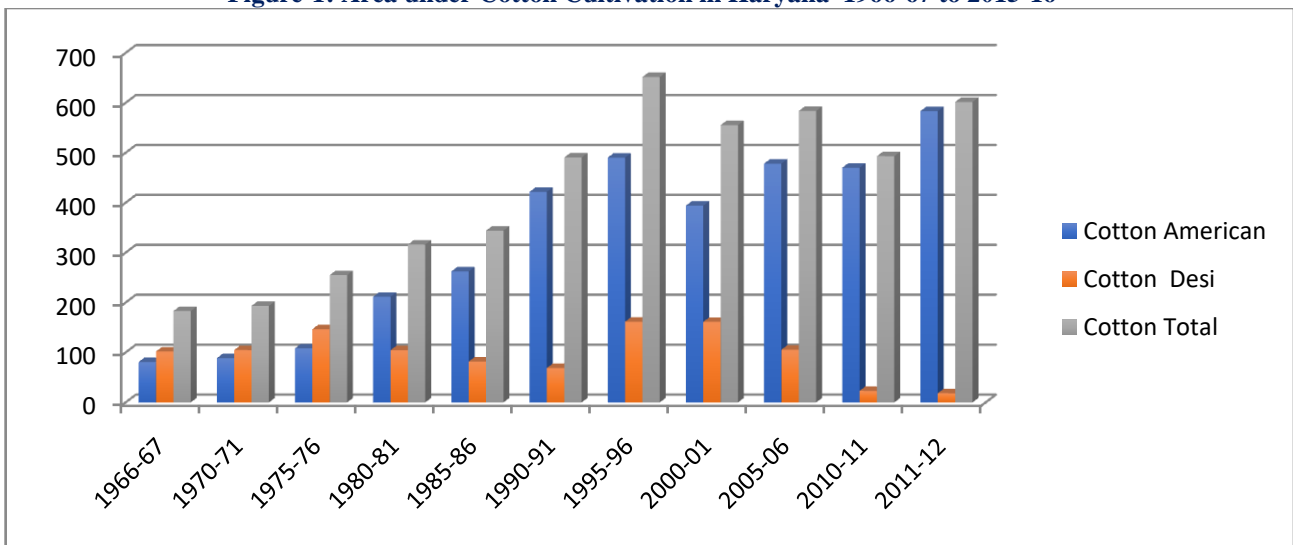
In year 2000-01 cotton crop expanded over an area of about 555.4 thousand hectares which produced 1383 thousand bales of cotton with yield of 424 kg per hectare. In the first decade of twentieth century the area under this crop decreased to 493 thousand hectares but the net production of cotton increased to 1747 thousand bales in Haryana. In 2011-12 again there was great increase in area under cotton crop. In this year total 601.8 thousand hectares area was under cotton crop plantation. During this season 2621 thousand bales of 170 kilograms of cotton were produced and the yield in the state was 739 kg per hectare. Area under cotton cultivation in Haryana from 1966-67 to 2011-12 has increased by 229%. Area under this crop in 2015-16 was 3.29 times than that area under this crop in 1966-67. In this duration cotton production has raised by 9.11 times and we were able to increase our yield by 2.77 times in the same time period.

**Table-2 District-wise Area under Cotton Cultivation, Cotton Production and Yield in Haryana In 2005-06**

District	American			Desi			Total		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Sirsa	161.5	635	670	29.0	110	644	190.5	745	667
Hisar	114.1	349	521	15.5	47	495	129.6	396	518
Fatehabad	77.1	321	709	13.8	52	632	90.9	373	697
Jind	36.0	109	516	9.8	28	474	45.8	137	506
Bhiwani	39.9	89	378	8.7	14	270	48.6	103	357

**Area in Thousand Hectares, Production in Thousand Bales of 170 Kg., Yield in Kg /hectare.Source: Statistical Abstract of Haryana 2015-16.**

**Figure-1: Area under Cotton Cultivation in Haryana 1966-67 to 2015-16**



**Area in thousand hectares**

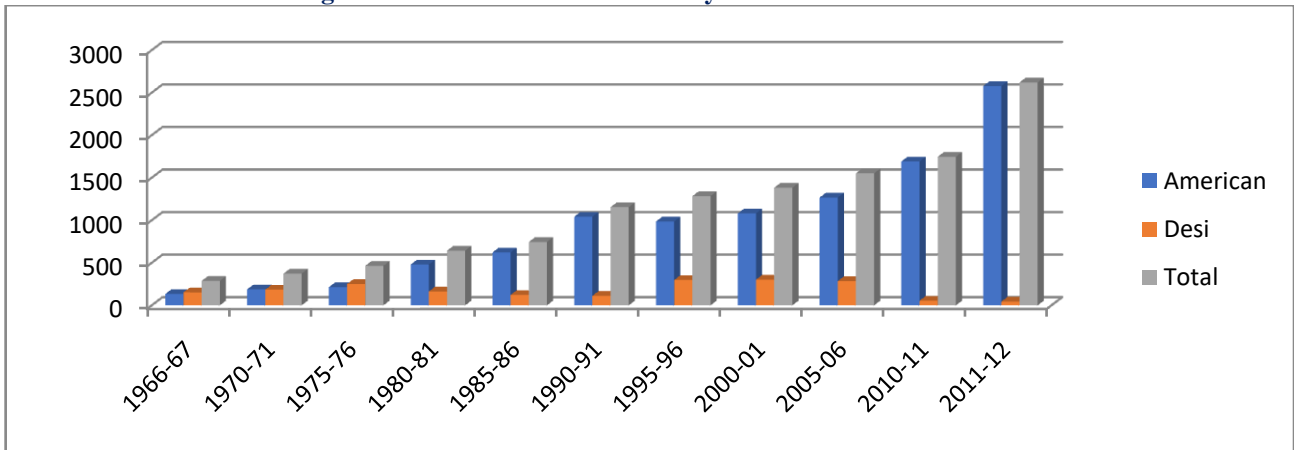
The present study also shows district-wise area under cotton cultivation, production and yield for year 2005-06

and 2011-12. According to Table-2 Sirsa district is on the top in cotton production which has 190.5 thousand

hectare s area under this crop. Sirsa district has produced 745 thousand bales of cotton in year 2005-06 and yield was 667kg/hectare. Hisar district is on 2<sup>nd</sup> rank with 129.6 thousand hectares area, 396 thousand bales production and 518kgs per hectare yield. Fatehabad district of the state was on 3<sup>rd</sup> position in terms of area under cotton cultivation which has 90.9-thousand-hectare area under this crop. This district was on the top

rank in yield with 697kgs per hectare in 2005-06. Bhiwani and Jind were other major cotton producing districts of the state which combinedly gave 240 thousand bales of cotton to the total production of the state. Apart from there five major cotton producing district, Mahendergarh, Kaithal, Rohtak, Jhajjar etc. were the two-cotton producing area of the state.

**Figure-2: Cotton Production in Haryana 1966-67 to 2015-16**



*Production in Thousand Bales of 170 Kilograms Cotton*

**Table-3 District-wise Area under Cotton Cultivation, Cotton Production and Yield in Haryana In 2015-16**

District	American			Desi			Total		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Sirsa	161.5	635	670	29.0	110	644	190.5	745	667
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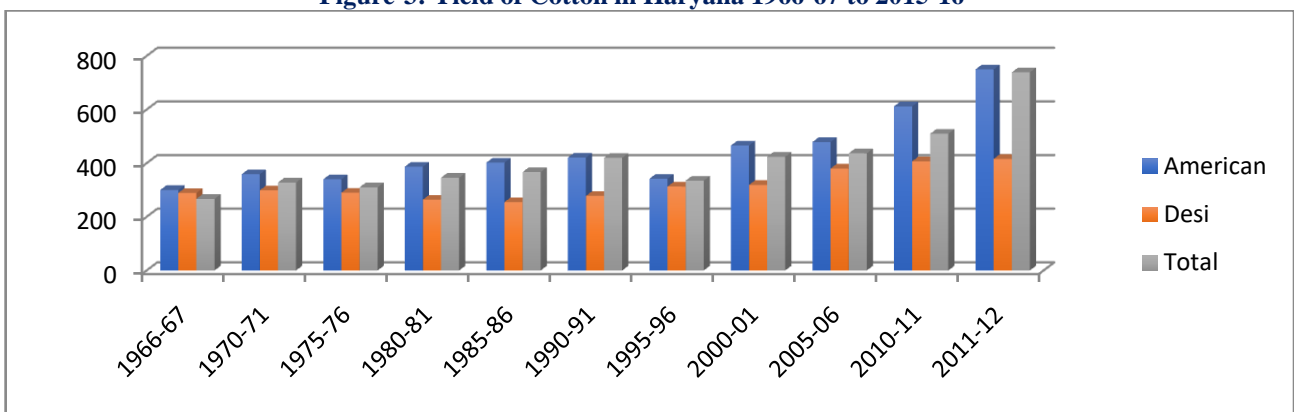
*Area in Thousand Hectares, Production in Thousand Bales of 170 Kg., Yield in Kg /hectare.*

**Source: Statistical Abstract of Haryana 2015-16.**

Table-3 shows the district-wise area under cotton cultivation cotton production and yield in Haryana in year 2011-12. This is shown in the Tabel-1 that the area under cotton crops has a slight increase of 3 percent in 2011-12 as compare to area under this crop in 2005-06 but production cotton increased by 69 percent during these 7 years. The production of cotton in 2005-06 was

1552 thousand bales which reached the figure of 2621 thousand bales in 2015-16. This development in cotton production in Haryana was due to increase in yield. The yield of cotton was 437 kg per hectare in 2005-06 and it touched the mark 739 kg per hectare with a considerable increase of 46 percent.

**Figure-3: Yield of Cotton in Haryana 1966-67 to 2015-16**



*Yield in Kilogram per Hectare*

In 2015-16 again Sirsa district with 211.3-thousand-hectare area under cotton crop, 899 thousand bales cotton production and with 770 kg per hectare yield was

on the top of the cotton producing districts in Haryana. Hisar was on the 2<sup>nd</sup> position with 153.5 thousand hectares area, which gave 528 thousand bales of cotton

to the national production with 615 kg per hectare of yield. Fatehabad district was on the 3<sup>rd</sup> position in area under cotton cultivation with 90.8 thousand hectares. This district abled to produce 358 thousand bales cotton production with 712 kg hectare. Fatehabad was on the 2<sup>nd</sup> position in yield in 2015-16 after Sirsa district. In year 2015-16 Jind and Bhiwani district were on the 4<sup>th</sup> and 5<sup>th</sup> position respectively in cotton production. Kaithal, Mahendergarh, Rohtak, Jhajjar, Kurukshetra were the other district which gave their major contribution in cotton producing in Haryana.

### Conclusion

In year 1966-67 in Haryana 183 thousand hectares land was under cotton cultivation on which about 373 thousand bales of the cotton was produced with the yield of 267 kg/hectare. In years 1980-81 total area under cotton cultivation was 316200 hectares. In this year first times the area under American cotton was double than Desi cotton. In year 1990-91 the cotton crop has grown over an area of 490.6 thousand hectares. Out of this only 69 thousand hectares area was under Desi cotton and rest 421.6 thousand hectares was under its American variety. After 1995-96 economic input in this crop increased rapidly in the form of high yielding variety seeds, fertilizers and pesticides. Consequently, the economic output decreased in cotton crop that is why the area under this crop started decreasing and this area occupied by rice cultivation in Haryana. In year 2000-01 cotton crop expanded over an area of about 555.4 thousand hectares which produced 1383 thousand bales of cotton with yield of 424 kg per hectare. In the first decade of twentieth century the area under this crop decreased to 493 thousand hectares but the net production of cotton increased to 1747 thousand bales in Haryana. In 2015-16

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### References

1. Singh, J., & V.K. (1985). Determination of Agriculture Productivity, A sample study of operational holding for land use planning (pp 183-210). Kurukshetra: Vishal Publication.
2. Morgan, W.B., & Munton, R.J.C. (1971). Agriculture Geography, London, Methue and Co. 1971 PP 38-40.
3. Singh, J., & Dhillon, S.S. (1976). An Agricultural Geography of Haryana. Kurukshetra: Vishal Publication.
4. Hussain, M. (1960). Pattern of crop concentration in U.P. Geographical Review of India, Volume 32, no.3.
5. Haryana Statistical Abstract, 1990-91, 1996-97, 2001-02 and 2015-16. Govt. of Haryana, Chandigarh.
6. District Census Handbooks of Haryana 2005-06 and 2015-16.
7. Lokanathan, P.S. (1967). Cropping Pattern In Madhya Pradesh. National Council of Applied Economic Research, New Delhi 18 March PP. 6-20.