



Chilli Cultivation in India and Karnataka: with Special Reference to Haveri District

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ABSTRACT

Chilli is one of the most valuable crops of India. Different varieties are grown for vegetables, spices, condiments, sauces and pickles. The crop is grown practically all over India. Among the most important states only for Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu account for three fourths of the total area. The other states having large areas under chillies are Madhya Pradesh, Punjab and Bihar. A small quantity of dry chilli is also exported. There is good scope for increasing its exports by pushing up production. Indian dry chillies are exported mainly to Srilanka, the USA, Canada, the UK, Saudi Arabia, Singapore, Malaysia and Germany, chillies are dry exported in different from fresh chillies, green chillies, chilli power and also as oleoresin. Dry chillies are grown in an area of 144707 hectares in Karnataka. The annual production of dry chillies is 230430 lakh tonnes. The average annual production per hectare in the State is 171 kgs. The chilli production in Karnataka is mainly rain-fed. Hence, the yield per hectare is low. The crop can be grown during all the seasons of the year.

KEYWORDS

Chilli, Production, Yield

Introduction:

In this paper an attempt is made to know the importance of dry chilli in Indian Economy. By studying agro-climatic condition, soil, land preparation, harvesting, storage, fertilizer application, plant protection, quality standards, irrigation, commercial classification of chilli, grading of chilli, area and production of dry chilli, exports of dry chilli in India and Karnataka. The main thrust of analysis in this paper is to provide an overview of the cultivation, production and marketing of chillies in India and Karnataka and Haveri District in particular.

Importance of Chilli in India:

Indian agriculture is playing a very important role both in the internal and external trade of the country. "Agriculture products like tea, coffee, sugar, tobacco, spices, cashew nuts, dry chilli etc.," are the main items of our exports and constitute about 30 percent of our total exports. "Moreover, manufactured jute, cotton textiles and dry chilli also contribute another 20 and 27 percent of the total exports of the country". Thus, "nearly 77 percent of India's exports are originated from agricultural sector".

Chilli crop is raised for ripe dry chillies and green pads. The dried forms of the fruits of the genus capsicum, which entirely falls into three categories, dry chillies, capsicums and paprika. The term chillies are generally applied to the small fruited forms of several capsicum species. "The term capsicum is generally used to describe the somewhat larger fruited mild to moderately pungent forms. Paprika's are sweet or mildly pungent forms and primarily valued for its red colouring power."

Objectives of the Study

- To study the area and production of dry chilli in India and Karnataka.
- To identify the marketing channel of dry chilli in Karnataka.
- To analyse the area, production and yield of dry chilli in Haveri district.

Area and Production of Dry Chilli in India

In India, Chilli is cultivated in almost all the states. India is the largest producer chillies in the world. In India chilli is cultivated in almost all the states. The area under chillies and its production is represented in table-1.

Table – 1: Area and Production of Dry Chilli in India 1998-99 to 2006-07

Sl. No.	Year	Area in Hec-tares	Per cent Increase or decrease over previous year	Production in Tonnes	Per cent Increase or decrease over previous year	Yield Kgs/hect-are
1	1998-1999	753100	-	5201776	-	691
2	1999-2000	883700	17.34	5797872	11.46	656
3	2000-2001	944200	6.85	8648872	49.17	916
4	2001-2002	881290	-6.66	9949764	15.04	1129
5	2002-2003	831630	-5.63	8457677	-15.00	1017
6	2003-2004	858784	3.27	10219529	20.83	1190
7	2004-2005	859200	0.05	10851696	6.19	1263
8	2005-2006	867783	1.00	10140000	-6.56	1168
9	2006-2007	763000	-12.07	1242000	-87.75	1628
10	2007-2008	805000	5.50	1292000	4.03	1605
11	2008-2009	779000	-3.23	1269000	-1.78	1629
12	2009-2010	767000	-1.54	1202000	-5.28	1567
13	2010-2011	792000	3.26	1223000	1.75	1544
14	2011-2012	804000	1.52	1276000	4.33	1587
15	2012-2013	794000	-1.24	1304000	2.19	1642

Source:

1. Agricultural Situation in India.
2. FAO Year Book Annual Production 1998-99 to 2012-2013. www.fao.org.

Area:

The total area under cultivation of dry chilli rose from 753100 hectares in 1998-99 to 883700 hectares in 1999-2000 and further to a record level of 944200 hectares in 2000-01. The subsequent period of 2 years experienced a decline in the total area under dry chilli, which came down to 881290 hectares in 2001-02 and further to a low level of 831630 hectares in 2002-03. Fluctuating trend in the area under dry chilli is noticed again during the next 5 years. The area under cultivation of dry chillies rose marginally to 858784 hectares in 2003-04 compared to the previous year. A sharp increase in the area under cultivation from 859200 hectares in 2004-05. A decline in the total area under dry chilli, which came down to 794000 hectares in 2012-13. The details are presented in table-1.

Production:

Fluctuating trends in the production of dry chilli in India are discernible during the decade from 1998-99 to 2006-07. Table-1 production of dry chilli came down to 8457677 tonnes in 2002-2003 but showed a revival for the next two years. The production of dry chilli increased to 10219529 tonnes in 2003-04 and further to a record level of 10851696 tonnes in 2004-05. A decline in the total production of dry chilli, which came down to 1304000 tonnes in 2012-2013.

Yield:

The figures of yield per the hectare of dry chilli in India reveal the same significant trends during the period from 1998-99 to 2006-07. A greater degree of stability in the yield of dry chillies per hectare is discernible though with some milled amount of fluctuations during the decade. The yield per hectare of dry chillies declined from 690 Kg. in 1998-99 to 656 Kg. in per hectare in 1999-00 but chillies steeply to 916 Kg. per hectare in 2000-01 to 1129 Kg. per hectare in 2001-02. The next years experienced some decline from 1017 kg in 2002-03 but rose steeply to 1190 kg., in 2002-03 but dry chilli steeply to 1190 Kg. per hectare in 2003-04. With some fluctuations in the yield per hectare during the subsequent 5 years there was a record rise to 1643 Kg. per hectare in 2012-2013. It is clear from table-1 that there has been a positive growth trend in all three parameters of growth in the area, production and yield of dry chilli during the period from 1998-99 to 2012-2013.

Export of Dry Chillies in India

The potential for increasing exports of whole chillies, chilli powder and crushed chillies in consumer packs is very high. But consumers in importing countries insist on 'clean spices' and to meet this challenge. Indian producers and exporters should make every effort to prevent contamination from external sources during harvesting, post harvest, handling, processing and storage. "This can be achieved only through an integrated approach with the collective efforts of farmers, processors and traders." Improved quality and productivity of Indian chillies will help promote exports and effectively meet the competition from other producing and exporting countries. "Conformance to the quality requirements of the buying countries, meeting the consumer's expectations and ability to maintain price competitiveness are the key factors which determine our survival in the international market."

Export trends of dry chillies during the last 9 years show some significant trends. Year after year fluctuations in the exports of dry chillies are noticed during the last 9 years from 2000-01 to 2008-2009. In spite of the fluctuations, both in terms of quantity and the value of export has registered an upward trend as could be seen in Table-2.

Table-2: Export of Dry Chillies in India

Sl. No.	Years	Total Production (in Tonnes)	Total Quantity Export (in tonnes)	Percentage of Exports	Value (Rs. in lakhs)
1	2000-01	8648872	62447.68	0.72	22,973.30
2	2001-02	9949764	65000	0.65	25,000.00
3	2002-03	8457677	81022	0.96	31,514.00
4	2003-04	10219529	86575.34	0.85	36,687.34
5	2004-05	10851696	138000	1.27	49,900.00
6	2005-2006	10140000	113174	1.12	40300.51
7	2006-2007	1242000	148500	11.96	80775.00
8	2007-2008	1292000	209000	16.18	109750.00
9	2008-2009	1269000	188000	14.81	108095.00

Source:

- 1) KARVY Commodities Research @ Karvv.com
- 2) Spices Board of India

United States of America is the major importer of dry chillies from India which contributes 24 percent to the total exports from India. Sri Lanka stand second with 24 percent followed by Bangladesh (13 percent), Malaysia (6 percent) and others (28 percent).

The upswing in the production of dry chilli crop last year and a consequent availability of large exportable surplus in the country when the crop in other major producing countries declined have resulted in a boom for dry chilli exports touching an all time high of an estimated 138000 tonnes valued at over Rs. 49,900.00 lakhs in 2004-05. India started exporting dry chilli in 1960-61 with 8364 tonnes valued at Rs. 176 crore, was in 2003-04 with 86575.34 tonnes valued at Rs. 36,687.81 lakhs in 2002-03, it was 81022 tonnes valued at Rs.31514 lakhs. After 2001-02 India export performance was excellent, higher international and domestic demand can further push the exports.

India exports dry chilli in the different processed forms like dry chilli powder dried chillies, pickled chillies etc and it is mainly exported to USA, Sri Lanka, Bangladesh, the Middle East and the Far East. There is a lot of voltage in the Indian dry chilli exports by dominating in the international markets and processed dry chilli can bring big boost to the prices, which can avail to higher exports. Among the total exports dry chilli contributes a majority of 72 percent to the total exports from India, followed by chilli powder with 27 percent and chilli seed (1 percent).

Area under Chilli Production and Yield per Hectare in Karnataka

The decline in the area under dry chillies from 159364 hectares in 2000-01 and 151377 hectares in 2002-03 and the subsequent period experienced a considerable stability of area under dry chillies from 1998-99 to 2004-05. Fluctuations in the dry chilli covered area in Karnataka during the last seven years are observed from table-3.

Table-3: Area and Production of Dry Chillies in Karnataka State (1998 -99 to 2012-2013)

Sl. No.	Year	Area (in Hec-tares)	Percent-age In-crease or Decrease Over Previous Year	Produc-tion (in tonnes)	Percent-age In-crease or Decrease As Per Previous Year	Yield kg /per Hectare
1	1998-99	170375	-	540648	-	317
2	1999-00	186901	8.84	457411	-18.20	245
3	2000-01	159364	-17.28	178285	-56.56	112

4	2001-02	171532	7.09	185901	4.10	108
5	2002-03	151377	-13.31	214320	13.26	142
6	2003-04	101289	-49.45	118345	-81.10	117
7	2004-05	144707	30.00	230430	48.64	159
8	2005-06	134703	-7.43	210210	-9.62	156
9	2006-07	121532	-10.84	129100	-62.83	106
10	2007-08	122633	0.90	168211	23.25	137
11	2008-09	122000	-0.52	135100	-24.51	111
12	2009-10	138000	11.59	138200	2.24	100
13	2010-11	113800	-21.27	122900	-12.45	108
14	2011-12	805000	85.86	127600	3.68	16
15	2012-13	794000	-1.39	130400	2.15	317

Sources: Horticultural crop statistics of Karnataka State at a Glance and Krishipethe, Agricultural Marketing Board, Bangalore

The production of dry chillies during the nine year period from 1998-99 to 2006-07 reveals a greater degree of stability. The production of dry chillies in Karnataka increase from 540648 tonnes in 1998-99. There has been decrease in 457411 tonnes in 1999-2000 and 178285 tonnes in 2000-01. There has been considerable increase to 185901, 214320 and 2748.51 tonnes in the years 2001-02, 2002-03 and 2004-05 respectively. The again decrease in 212994 tonnes in the year 2003-04.

The yield per hectare of dry chillies in Karnataka fluctuated during the first two years. It yields from 317 kg per hectare in 1998-99 but decline to 245 kg per hectare in 1999-2000, 112 kg in 2000-01 and 108 kg in 2001-02. The yield per hectare shows increase in the subsequent period.

Marketing of Dry Chillies

Marketing of dry chillies is carried on through the village merchants and commission agents. Farming uses their own vehicles in transporting their produce from the fields to the markets. Other hires transport such as trucks and tractors. Transport facilities are mostly owned by the intermediaries and use them to transport the produce from villages to the marketing centers. Grading of dry chillies extensively and the regulated markets in almost all the taluka places also provide grading facilities. The grading of dry chillies in regulated markets is done on the basis of variety, size of pods, colour, taste, moisture and seed content. There should be uniformity in the colour of the fruits and it should not vary from bag to bag within the consignment.

Comparison of Average Yield per Hectare with National Average in Dry Chillies (1998-99 to 2004-05)

The dry chilli was decreasing 171 kg for Karnataka State during the same average same period and the net difference was 805.42 kg for dry chillies. The factor responsible for this phenomenon was the poor yield caused by adverse weather, pests and diseases.

The year wise distribution of the area under dry chilli in the district also showed irregularities. On the whole it could be found that larger portion of the dry chilli come from Haveri districts is accounted for 23.04 percent during the decade of study.

Table – 4: Comparison of Karnataka's average yield per hectare with national average in Dry Chilli (1998-99 to 2012-13)

Sl. No.	Year	Dry Chillies		
		Average yield in India (In Kg.)	Average in yield in Karnataka (In Kg.)	Net Difference
1	1998-1999	664	317	347
2	1999-2000	656	244	412
3	2000-2001	916	111	805
4	2001-2002	1129	108	1021
5	2002-2003	1017	141	876
6	2003-2004	1190	117	1073
7	2004-2005	1263	159	1104
8	2005-2006	1551	146	1405
9	2006-2007	1627	1151	476
10	2007-2008	1611	1161	450
11	2008-2009	1630	1162	468
12	2009-2010	1568	1048	520
13	2010-2011	1544	1136	408
14	2011-2012	1586	1115	471
15	2012-2013	1643	1124	519

Sources:

- 1) Horticultural crop statistic of Karnataka State at a Glance.
- 2) Chilli Agri-Export Zone in Bangalore.

Haveri headed the group with an average percentage of 33.88 followed by Davanagere (13.18) and Tumkur (12.32). Together only these three districts, contributed 59.38 percent of the total chilli area in the State during the decade as compared to dry chilli Dharwad district is an average percentage of 37.58 followed by Haveri (23.04 percent) and Gadag (9.36 percent) Together only these three districts, contributed 69.98 percent of the total dry chilli area in the State during the decade. The year wise break-up presented no different picture.

Area Production and Yield of Dry Chillies in Haveri District

Haveri district has the maximum area under the dry chillies crop in Karnataka and it also tops the list of district wise production of dry chillies in the State. Haveri is one of the few important districts growing dry chillies in India. The annual figures of area, production and yield of dry chillies are provided in Table-5.

Table – 5: Area, production and yield of Dry chillies in Haveri District

Sl. No.	Year	Area (in Hectares)	Percentage Increase or decrease over previous year	Production (in Tonnes)	Percentage Increase or decrease over previous year	Average Yield per hectare
1	1998-1999	27145	--	133033	--	490
2	1999-2000	44610	+64.33	147983	+11.23	331
3	2000-2001	36137	-18.99	48472	-67.24	134
4	2001-2002	40304	+11.53	33162	-31.59	082
5	2002-2003	38369	-4.80	99840	+201.06	260
6	2003-2004	26828	-30.07	26828	-73.13	147
7	2004-2005	33274	+24.02	48811	+81.94	147
8	2005-2006	43129	+29.62	87475	+79.21	202.82
Average		35238.14	--	76875.57	--	227.29

Source :

- 1) Horticultural Crop Statistic of Karnataka State at a Glance
- 2) District Statistical Office of Haveri

The production was also decreased from 48472 tonnes in year 2000-01. Then, again increased area about 40304 hectares in

year 2001-02, but production of dry chilli is decreased from 33162 tonnes during the year 2001-02.

Table- 6: Share of Haveri District in Dry Chilli in Karnataka State (1998-1999 to 2004-2005)

Sl. No.	Year	Area under Dry Chilli (in hectares)			Production of Dry Chilli (in tonnes)		
		Karnataka State	Haveri District	Percentage Share of Haveri District	Karnataka State	Haveri District	Percentage Share of Haveri District
1	1998-1999	170375	27145	15.93	540648	133033	24.61
2	1999-2000	186901	44610	23.87	457411	147983	32.35
3	2000-2001	159364	36137	22.68	178285	48472	27.19
4	2001-2002	171532	40304	23.49	185901	33162	17.84
5	2002-2003	151377	38369	25.35	214320	99840	46.58
6	2003-2004	101289	26828	26.49	118345	26828	22.67
7	2004-2005	144707	33274	22.99	230430	48811	21.19
Average		155077.86	35238.14	22.72	275048.57	76875.57	27.95

Source:

- 1) Horticultural Crop Statistic of Karnataka State at a Glance
- 2) District Statistical Office of Haveri

The dry chilli area is declined for the 38369 hectares in 2002-03 but production of dry chilli more was 99840 in the same year. Further, there was an increase in area from 26828 hectares in 2003-04 to 33274 hectares in 2004-05, but production was declined for the 26828 tonnes in 2003-04 in case of year 2004-05 production is increase in 48811 tonnes over the previous year. But again increase in area is 33274 hectares and 43129 hectares in 2004-05 and 2005-06 years. The production was also increasing 48811 tonnes and 87475 tonnes as a same during period.

Major Findings

1. Chilli growing becomes the top priority in Savanur taluka nearly 32.70 percent of the land is suitable for Chilli cultivation. As results, there has been much increase in production every year.
2. Chilli has been growing during Kharif season and 75 percent of the Chilli area depends on rainfall and 25 percent area is being irrigated.
3. Chilli production and cultivation also has been increased due to adoption of high yielding varieties of seeds use of technology, fertilizer, monure and scientific inputs.
4. The Chilli is a brought under cultivation both in irrigated and non-irrigated regions.
5. The average annual area under cultivation of chilli in India is is increase to 858843.42 hectares.
6. The average annual production of dry chilli in India is 7778169.42 tonnes.
7. The average annual yield per hectare of dry chilli in India is 976.42 Kgs.
8. The average annual area of cultivation of dry chilli in Karnataka is 155077.86 hectares.
9. Average annual production of dry chilli in Karnataka is 275048.57 tonnes.
10. Average annual yield per hectare of dry chilli in Karnataka is 171kg.

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