

# EXPORT PERFORMANCE OF INDIAN CHILLY

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## **ABSTRACT**

*The main purpose of this article is to know and observe the present state of Indian chilly area of cultivation, production and exports and critically analyze the foreign exchange earnings through chilly exports. India is the home of many spices and it has great privilege to produce no. Of spices such as Chilly, Turmeric, Cumin, Coriander, Ginger, Fenugreek, Cardamom, curry powder, Oils Oleoresins, Garlic and Mint products for analysis. Out of all spices chilli stand in first in area of cultivation, production and exports and Chilli is the universal spice of India. Chilly export data for 10 years from 2007-08 to 2016-17 were collected and Compound Annual Growth Rate tool is used to analyze the statistical data. During 2016-17 India has cultivated chilly in 830770 hectares and production is 1872010 MT's and out of it India has exported 4000250 MT's of chillies and earned 5070.75 crores of foreign exchange. India is the largest producer, consumer and exporter of chilly in the world. Other significant producers are Mexico, USA, South Korea, Thailand, Pakistan, China and Turkey. Export performance of chilly is very good and India has exported 95929 MT of chilly to Vietnam, 96101 MT's to Thailand, 52053 MT's to Srilanka, 44187 MT's to Malaysia, 40934 MT's to Indonesia and 39172 MT's to USA.*

**KEY WORDS:** Chilly, Area, Production, Exports, climate, cultivation, countries, Scoville scale. Growth rate, development, spices.

## **INTRODUCTION**

Chilly is the fruit plant belonging to Capsicum genus and solanaceae family. Chilli is one the most important spices garnishing dishes. Capsicum is derived from the **Greek word “Kapsimo”** which means **“to bite”**. When eaten, it gives a burning sensation.

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Chilli is nature's wonder. Its fruit appears in different sizes, shapes and color. The fruit size of some varieties is more than hundred times that others. The shape may be elongated or round, and distal end pointed, blunt or sucked in. Corrugated, leathery or smooth may be the touch on outer skin. It may look like a bird's eye or a small orange fruit. Colour varies from blue, green, orange, red, yellow violet, cream white to near black.

Today India is the major chilly growing country in the world. Other significant producers are Mexico, USA, South Korea, Thailand, Pakistan, China and Turkey.

### **BENIFITS OF CHILLI**

Chilly are excellent source of Vitamin, A, B,C and E with minerals like molybdenum, manganese, folate. Potassium, thiamine and copper Chilly contains seven times more vitamin C than orange. Further chilly have antioxidants and acts as detoxifiers as they removes waste products from body. Chilli works as antibiotic and bring fresh blood to the site of the infection and capsaicin stimulates brain to excrete endorphin and gives a sense of pleasure when ingested. Chilly have vitamin B6 and folic acid. The vitamin B reduces high homocysteine level.

### **HISTORY OF CHILLI**

Chilly originates from South America. In search of spices, Christopher Columbus set his journey from Portuguese. However, Christopher Columbus landed in South America. He found that the origins of South America used Chilly. Columbus named them as "peppers" because they were similar in taste as black pepper. After the discovery of the spices, chilli replaced black pepper as prime spices in the culinary.

When chilly pepper brought to **Spain, Diego Alvarez Chanca**, a Spanish physician found that chilly had medicinal value. Chilli was believed to cure disease and used as pain killers. From Spain, chilli spread to rest of Europe and soon spread to south Asian countries like Indian and China. Chilli was introduced to India by the Portuguese explorer, Vasco-da-Gama who landed in 20<sup>th</sup> May, 1498. Chilli was introduced in China and spread further to Japan. Soon Chilli was accepted as very important spices in the local cuisines.

There are more than 400 different varieties of chilly found all over the world. The **world hottest chilli "Naga Jolokia"** is cultivated in hilly terrain of Assam in a small town Tezpur, India.

Today, it is unimaginable to think of India cuisine without the hot spice, Chilli. India has become world's largest producer and exporter of Chilli, exporting to Canada, UK, USA, UAE, Saudi Arabia, Singapore, Malaysia, Germany, China, Vietnam and many countries across the world. It contributes more than 25% of world's total production of chilli. India is growing different varieties of spices some of the hottest, less pungency and good in color. India is dominating in the world chilli markets. The major chilli growing states in India are Andhra Pradesh, Karnataka, Maharashtra, Gujarat, Tamilnadu and Orissa.

India is the largest producer, consumer and exporter of Chilli in the world. India exported around 400250 MT chilly and earned the foreign currency around Rs.5070.75 crores during 2016-17 data from Spices Board India.

## CLIMATE AND CULTIVATION:

Chilli is grown in both tropical and sub-tropical climate as it comes up well in warm humid climate with an optimum temperature of 20–30°C. In Indian subcontinent, chilli is produced throughout the year. Two crops are produced in kharif and rabi seasons in the country. Growth and yields suffer when temperatures exceed 30°C or drops below 15°C for extended periods. The crop can be grown over a wide range of altitudes from sea level upto nearly 2100 meter. Although chilli can be grown on all types of soils, it is best suited for sandy loams and clay loams with proper drainage.

## SCOVILLE SCALE

Scoville scale is used for determine the pungency of the chilly. The Scoville Organoleptic Test was invented by a pharmacist, Wilbur L Scoville, in 1912 while working in Parke Davis Pharmaceutical Company. Since that time, this method of measuring the pungent property of chilly is now used widely across the world as it was founded to be systematic approach. Basically the pungency of the chilly depends on the location in which chilly is grown and the genetic structure of the chilly. The pungency of the chilly is due to the **capsaicin**, a chemical compound found in placenta of the chilly. Capsaicin stimulates the nerve endings in the tongue which transmits to brain making the body release endorphin.

## OBJECTIVES

1. To know and observe the present state of Indian chilly area of cultivation, production and exports.
2. To critically analyze the foreign exchange earnings through chilly exports.

## METHODOLOGY

The secondary data is used for the study. Secondary data collected from Spices Board, India Brand Equity Foundation, Department of Horticulture reports, articles, and necessary information gathered from various journals and books. The data of area, production and exports are for 10 years from 2007-08 to 2016-17. The data have been analyzed with statistical techniques, such as Compound Annual Growth Rate (CAGR) and based the formulas tables and graphs have been drawn.

**Table No.1**

**Area and production of Indian chilly (2007-2017)**  
(Area in Hectares and production in MT)

Year	Area	Index	Percentage	Production	Index	Percentage
2007-08	835330	100		1369400	100	
2008-09	802896	96	-0.04	1381531	101	0.01
2009-10	809699	101	0.01	1470352	106	0.06
2010-11	716428	88	-0.13	1299191	88	-0.13

2011-12	793921	111	0.10	1448215	111	0.10
2012-13	787530	99	-0.01	1378400	95	-0.05
2013-14	791930	101	0.01	1376400	100	0.00
2014-15	766620	97	-0.03	1621480	118	0.15
2015-16	742950	97	-0.03	1497440	92	-0.08
2016-17	830770	112	0.11	1872010	125	0.20

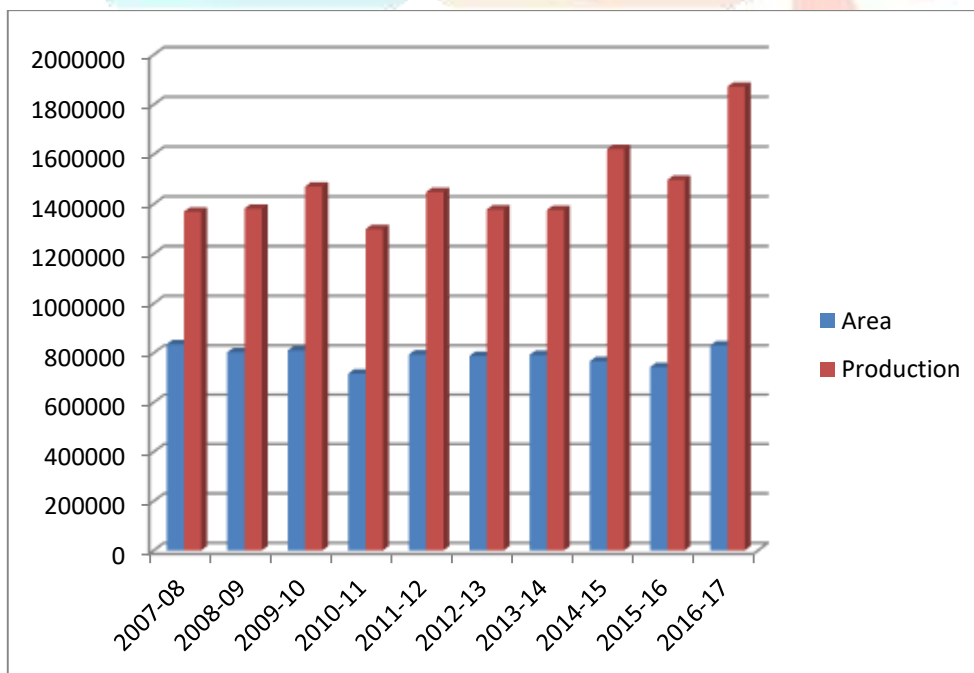
Source: Spices Board India

### Data analysis

During 2007-08, 2009-10, 2011-12, 2013-14 and 2016-17 area of cultivation of chillies was good and production also very encouraging in this period because of good water source, availability of good hybrid seeds, technology and more knowledge about the products. But 2008-09, 2010-11, 2012-13, 2014-15 and 2015-16 area of cultivation was less because of climatic conditions, use of local seeds and dry land cultivation. Production also fluctuating year by year because of the weather condition, pest and disease problems in the field.

Figure No.1

Year wise area and production of chilly.



### Data interpretation:

During 2007-08 chilly area of cultivation is 835330 hectares and production was 1369400 MT and 2016-17 area of cultivation is 830770 hectares and production is 1872010 MT's. In 2006-07 and 2016-17 there is no significant improvement in area of cultivation, but tremendous growth in production around 27% such as

1872010 MT's of production has noticed. In between the years area and production figures were fluctuated because of climatic condition, pest and diseases problems, non-availability of input supply and quality seeds and other significant issues.

The data have been analyzed with statistical techniques, **Compound Annual Growth analysis** and graphs. According to the CAGR analysis in the years 2007-08, 2009-10, 2011-12, 2013-14 and 2016-17 area and production growth of chilly is good.

**Table No.2**  
**Indian chilly exports from 2007-08 to 2016-17**

Year	Quantity(MT)	index	Percentage	value(in lacks)	index	Percentage
2007-08	209000	100		109750	100	
2008-09	188000	90	-0.10	108095	98	-0.02
2009-10	204000	109	0.09	129173	119	0.19
2010-11	240000	118	0.18	153554	119	0.19
2011-12	241000	100	0.00	214408	140	0.40
2012-13	301013	125	0.25	238074	111	0.11
2013-14	312500	104	0.04	272227	114	0.14
2014-15	347000	111	0.11	351710	129	0.29
2015-16	347500	100	0.00	399744	114	0.14
2016-17	400250	115	0.15	507075	127	0.27

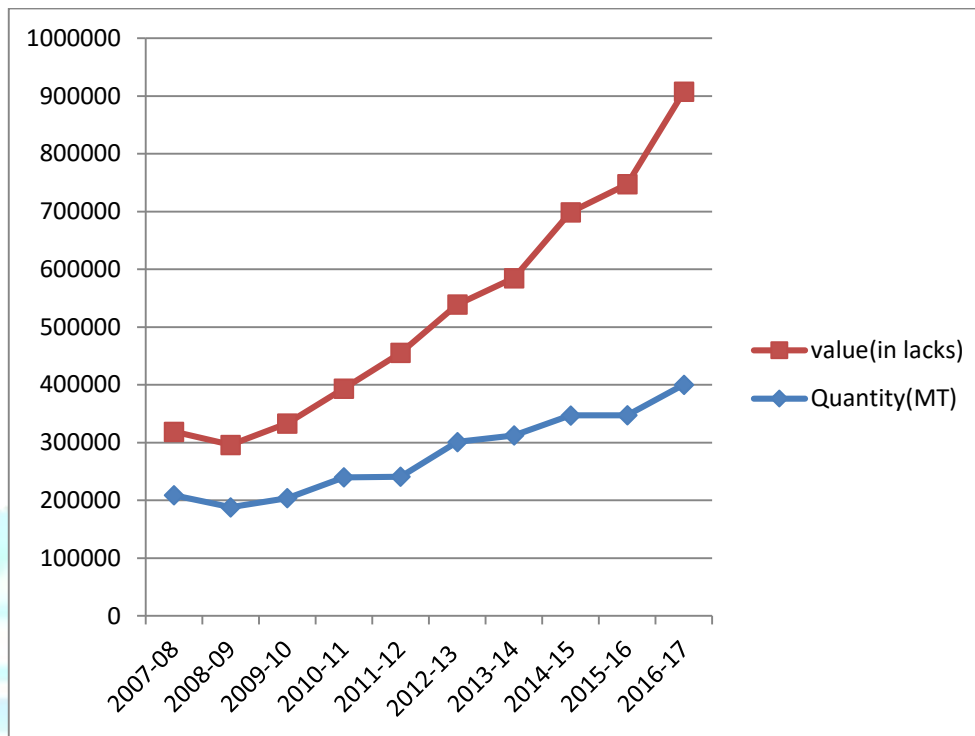
Source: spices Board, Govt of India.

#### Data Analysis:

The growth rate of Indian chilly exports in quantity wise and value wise is study and stable year wise from 2007 to 2017. Quantity wise except 2008-09 the period time from 2007 to 2017 quantity was increasing year by year in an average 10%. Because of the climatic conditions and crop failure India has exported 188000 MT's chillies during 2008-09. During 2016 -17 India has exported 947790 MT's spices and earned 17664.60 crores of foreign exchange. At the same time India has exported 400250 MT's of chilly and earned foreign currency of 5070.75 crores, which is 42% in quantity and 29% value. It is fact that through chilly exports India is earning more foreign currency comparatively other spices and condiments.



**Figure No.2**  
**Indian chilly exports from 2007-08 to 2016-17**



Source: spices Board India

#### Data interpretation:

The above graph representing about the India chilly exports quantity in MT and value of exports in lacks. For the year 2007-08 to 2016-17 quantity of exports are increase by 92% and value also increased by 360%. For the period 2015-16 to 2016-17 there is 15% of growth is noticed in Quantity and 27% growth rate in value of exports. According to the CAGR analysis the exports of chilly in value increased gradually from the year 2009-10 to 2016-17. In 2016-17 the exports are very high. The price index in 2016-17 is also high. In the years 2007-08 and 2008-09 exports are less because of low are of cultivation and production and productivity.

**Table No. 3**

#### Area, production and export percentage in production from 2007-17

Year	Area in Hectares	Production in Tonnes	Exports in MT	Exports in %
2007-08	835337	1369399	209000	15.26
2008-09	802896	1381531	188000	13.61
2009-10	809699	1470352	204000	13.87
2010-11	716428	1299191	240000	18.47

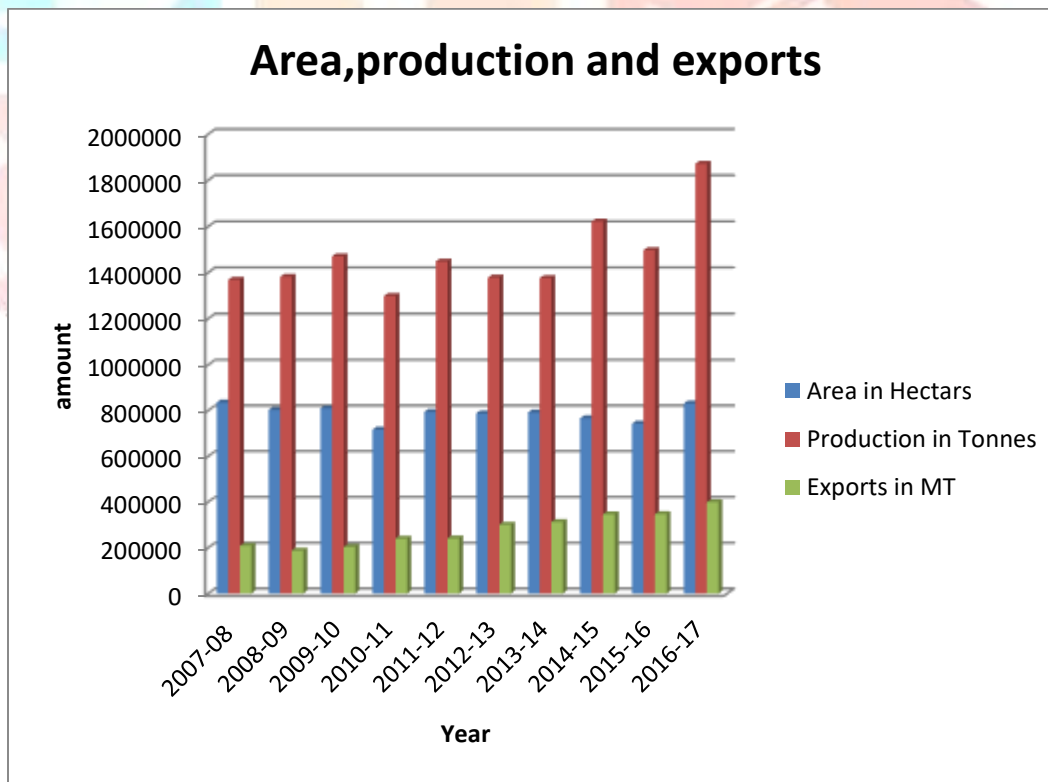
2011-12	793921	1448215	241000	16.64
2012-13	787530	1378400	301000	21.84
2013-14	791930	1376400	312500	22.70
2014-15	766620	1621480	347000	21.40
2015-16	742950	1497440	347500	23.21
2016-17	830770	1872010	400250	21.38

Source: Spices Board India

### Data Analysis:

India is the largest producer, consumer and exporter of chillies in the world. The export percentage during 2007 to 2012 is 15% an average and during 2013-17 exporter percentage is improve lot and it is 22% in an average. During 2015-16 India has produced 1497440 MT's chillies and exported 34500 MT's which coming 23.21% is. This is highest export percentage from 2007 onwards. Majorly India has exported Vietnam, Thailand, Srilanka, Malaysia, USA,, UAE,, Indonesia, Mexico, Bangladesh and Singapore.

Figure No.3



**Data Interpretation:**

The above graph is showing the India chilly cultivation area, production and export percentage in production. There is significant growth rate year by year in production and exports also. During 2007-08 India has produced 1369399 MT's and exported 20900 MT'which is 15.26% and remaining 1160399 chillies were consumed domestically. But there is a growth and development in production and exports in 2016-17 the production is 1872010 MT's and exported 400250 MT's which is 21.38%. India has lot of scope for development in area , production and exports of Chillies.

**Table No.4****Country wise Chilly exports from India during 2016-17**

Country	Value in Lacks	Export Percentage
VIETNAM	95929	20
THAILAND	96101	20
SRI LANKA	52053	11
MALAYSIA	44187	9
U.S.A	39172	8
U.A.E	28636	6
INDONESIA	40934	8
MEXICO	20309	4
U.K	10303	2
BANGLADESH	32720	7
SINGAPORE	5086	1
NEPAL	7043	1
SAUDI ARABIA	3416	1
QATAR	3565	1
CANADA	2635	1
CHINA	2723	1
AUSTRALIA	2862	1
OMAN	2298	0
<b>Total</b>	<b>489974</b>	<b>100</b>

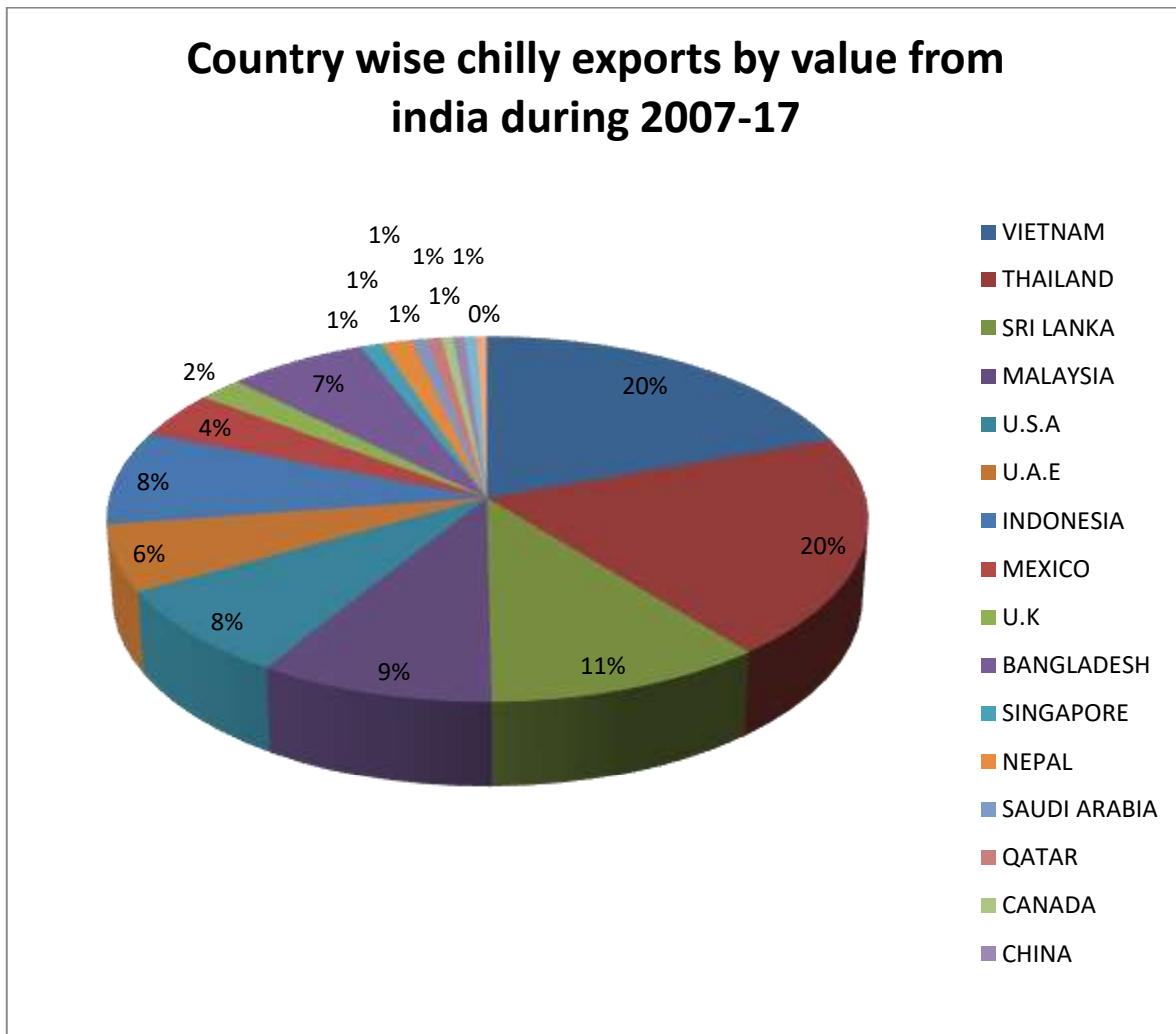
Source: Spices Board India



**Data analysis:**

The above table is taking about the value and percentage of chillies during 2016-17 exported to Vietnam, Thailand, Malaysia, Singapore, USA, UK, Singapore, Mexico, Bangladesh, Qatar, China, Australia, Oman and Canada. India is the leading exporter of chillies in the world. Exports growth rate to this countries are very good. Based on the table India has lot of scope to improve the exports to Singapore, Nepal, Saudi Arabia, Canada, Qatar, Australia and Oman because the percentage of exports to these countries very negligible during 2016-17.

**Figure No.4**



**Source: Spices Board India**

**Date Interpretation:**

India occupies a prominent position in the world’s chillies trade. During 2016-17 India has exported to majorly countries like., Vietnam 95929 MT which is 20% of total exports and next major importers of Indian chilly are Thailand 96101 MT which is also coming as 20% of total exports and other importers of Indian chillies are Srilanka 52053 MT (11%) , Malaysia 44187 MT’s (9%), USA 39172 MT’s (8%), UAE 28636

MT's (6%), Indonesia is 40934 MT's (8%) and other UK, Bangladesh, Singapore, Nepal Saudi Arabia, Qatar, Canada, China and Australia comes under the list of India chillies importers. India has exported 400250 MT's and earned Rs.5070.75 crores of foreign out of chillies exports during 2016-17.

### **SUMMARY AND CONCLUSIONS:**

During 2007-08 chilly cultivated area is 835330 hectares and production is 1369400 MT and 2016-17 area of cultivation is 830770 hectares and production is 1872010 MT's. In 2006-07 and 2016-17 there is no significant improvement in area of cultivation, but tremendous growth in production around 27% such as 1872010 MT's of production has noticed. The growth rate of Indian chilly exports in quantity wise and value wise is study and stable year wise from 2007 to 2017. Quantity wise except 2008-09 the remaining period of time from 2007 to 2017 quantity was increasing year by year in an average 10%. Because of the climatic conditions and crop failure. India has exported 188000 MT's chillies during 2008-09 and 2016 -17 India has exported 947790 MT's spices and earned 17664.60 crores of foreign exchange. At the same time India has exported 400250 MT's of chilly and earned foreign currency of 5070.75 crores, which is 42% in quantity and 29% value.

During 2007-08 India has produced 1369399 MT's and exported 20900 MT's which is 15.26% and remaining 1160399 chillies were consumed domestically. But there is a significant growth and development in production and exports in 2016-17 the production is 1872010 MT's and exported 400250 MT's which is 21.38%. India has lot of scope for development in area, production and exports of Chillies. In 2016-17 India has exported to Vietnam 95929 MT which is 20% of total exports and next major importers of Indian chilly are Thailand 96101 MT which is also coming as 20% of total exports and other importers of Indian chillies are Srilanka 52053 MT (11%), Malaysia 44187 MT's (9), USA 39172 MT's (8), UAE 28636 MT's (6), Indonesia is 40934 MT's (8)

### **SUGGESTIONS:**

1. Lot of scope for improvement of area and production by using best irrigation methods, improved varieties of seeds, latest technology, IPM and Organic farming, best agricultural practices, best harvest practices.
2. An average exports of chillies from 2007 to 17 is 19% only and it required to scale up chilly exports in quantity and value wise by practicing best manufacturing practices, quality and hygienic practices in supply chain management of chillies.

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