

Production and Export Performance Indian Spices

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Abstract

The main purpose of this article is to know and observe the present state of Indian spices area of cultivation, production and exports and critically analyze the foreign exchange earnings through spices exports. India is the home of many spices and it has great privilege to produce many spices such as Chilly, Turmeric, Cumin, Coriander, Ginger, Fenugreek, Cardamom, curry powder, Oils Oleoresins, Garlic and Mint products. For analysis spices area of cultivation, production and 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 spices cultivated area in 3535400 hectares and produced 7077300 MT's and out of it India has exported 947790 MT's of spices and earned 17664.60 crores of foreign exchange. India is the largest producer and exporter of spices of the 109 varieties listed by the International Standard Organisation (ISO), as the country produced and exports about 75 varieties of spices in its climatic regions. Along with India other significant spices producing countries are Guatemala for Cardamom, China for Ginger and Chilli pepper, Pakistan for Turmeric, , Turkey for Cumin, Indonesia for Venilla, Nutmeg, Cinnamon, and cloves and Madagascar for vanilla, Grenada for Nutmeg, china for Cinnamon, Madagascar for cloves, Iran and Spain for Saffron, Vietnam for pepper. Today Indian spices are the most sought-after globally, given their exquisite aroma, texture and taste. India has the largest domestic market for spices in the world. India is the biggest trade partner to many prominent countries. During 2016-17 India has exported 73293 MT's spices to USA, 155868 MT's to Vietnam, 15552 MT's to china, 73365 MT's to UAE, 67128 MT's to Malaysia, 30644 MT's to UK,64388 MT's to Srilanka, 42849 MT's to Indonesia.

Key Words: Indian spices, production, Export, flavour, aroma, international market, producer, consumer, spices.

Introduction:

India is the “land of spices”. The flavour and fragrance of Indian spices had a magic spell in human civilization and culture since very ancient days. Spices bring to mind images of tempting culinary art, fascinating travels and bitter struggle for supremacy. Expressions like “Variety is the spices of life” and “sugar and spices and all that are nice” show how spellbound were men of letter about the fascination of spice.

A spice is dried seed, fruit, root, bark or vegetable substances primarily used for flavouring, preserving and colouring food. Spices are distinguished from herbs, which are parts of leafy green plants also used for flavouring or as garnish. Many spices have antimicrobial properties. Many spices have antimicrobial properties and used usually religious ritual, cosmetics or perfume production, or as vegetable. For example turmeric roots consumed as vegetable and garlic as an antibiotic.

India primarily exports Chilly, Turmeric, pepper, cardamom, Cumin, Ginger, Coriander, mustard, Garlic, cloves, Nutmeg, Mace, Cassia, Star Anise, tamarind, vanilla, Oils and oleoresins. Processed spices like spice oils and oleoresins, curry powders, mints products, blended spices and seasonings.

During 2016-17 India has exported 73293 MT's spices to USA, 155868 MT's to Vietnam, 15552 MT's to china, 73365 MT's to UAE, 67128 MT's to Malaysia, 30644 MT's to UK,64388 MT's to Srilanka, 42849 MT's to Indonesia. During 2016-17 India earned 7524.70 crores from

East Asian Zone, 3336.00 crores from American zone, 2424.20 crores from European Zone, 2214.94 crores from East Asia, 545.54 crores from Latin America zone. Out of all India has earned 17664.61 crores during 2016-17 by exporting spices to world comparatively 16238.23 crore during 2015-16.

Objectives

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

Methodology

The secondary data are used for the study. Secondary data were collected from Department of Horticulture, Spices Board website, reports, articles, India Brand Equity Foundation and necessary information gathered from various journals and books. The data of area, production, export for 10 years 2007-08 to 2016-17 of major spices such as Pepper, Cardamom (small & large), chilli, Ginger, Turmeric, coriander, Cumin, Mustard seed, Poppy seed, Garlic, clove, Nutmeg, mace, cassia, star anise, mint products and oil & oleoresins. The data have been analysed with statistical techniques, tools, Compound Annual Growth Rate analysis and drawn the tables and graphs for analysis.

Data analysis:

The table no. 1 is speaking about the spices wise area of cultivation during 2007-08 to 2016-17. The compound annual growth rate analysis tool is used to know the growth rate in area of spices cultivation. As for the CARG formula Fenugreek area of cultivation 0.16 percent is increased in 2016-17 comparatively 2007-08 because of good weather, water and good seeds availability. Cumin by 0.05 percent, Coriander by 0.04 percent, ginger by 0.03 percent and pepper production area is reduced by 0.05 percent because of climatic conditions. There is no change in chilli area of cultivation almost the same in 2006-07 to 2016-17. Nutmeg and Cinnamon growth rate noticed is 0.05 & 0.07 percent respectively. Even growth rate of all spices during 2016-17 is noticed only 2 percent only.

Table No.1

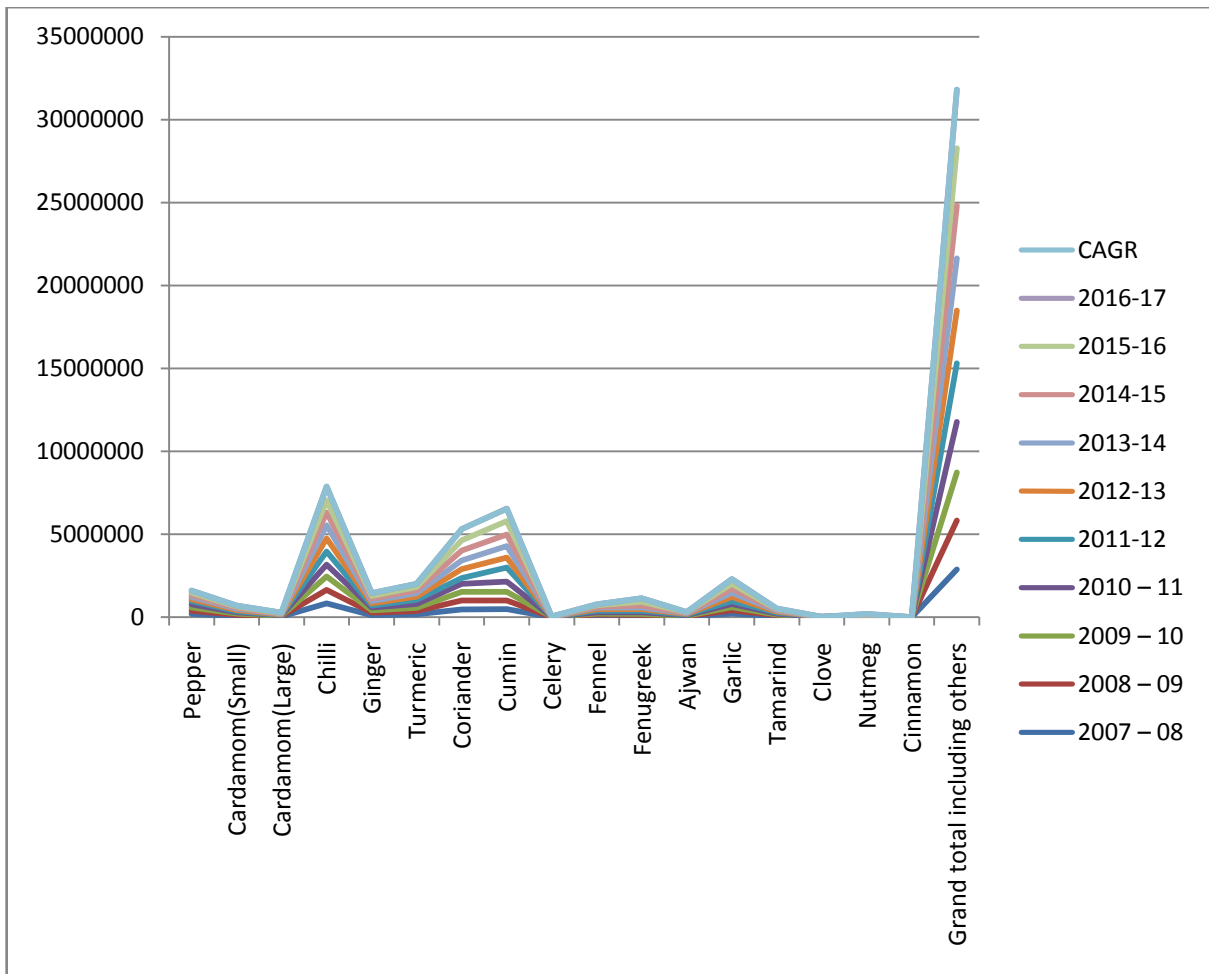
SPICE WISE AREA OF CULTIVATION FROM 2007-17(In Hectares)

Spices	2007 – 08	2008 – 09	2009 – 10	2010 – 11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
Pepper	198956	181299	198986	183780	201381	122500	122400	123900	131790	131230	-0.05
Cardamom(Small)	69300	71170	71110	71012	71285	69870	69970	69970	70080	69357	0.00
Cardamom(Large)	30039	27034	27034	26984	26460	26060	26060	26387	26387	26617	-0.01
Chilli	836831	802896	809699	716428	793921	787530	791930	766620	742950	830770	0.00
Ginger	123708	143861	142089	167432	125374	134430	138200	153100	156910	164850	0.03
Turmeric	178021	195076	187535	232022	251824	194330	207570	178470	183480	193395	0.01
Coriander	457605	537327	530789	474250	362148	531070	516070	604090	624780	662345	0.04
Cumin	477936	527132	517133	625087	843401	593980	690080	701560	808230	760130	0.05
Celery	3158	4117	4312	3776	4176	4070	4070	4070	4010	4010	0.03
Fennel	89894	74149	53497	81890	92446	99610	94070	46760	76000	74660	-0.02
Fenugreek	55520	74512	71985	94760	96304	93110	90500	124710	227960	218430	0.16
Ajwan	35635	26148	20628	27257	45693	39690	39260	24010	26600	24230	-0.04
Garlic	220530	190468	187271	202888	171800	247430	238760	261510	295600	274550	0.02
Tamarind	55707	54281	44186	56530	52788	58300	58720	54120	47660	49020	-0.01
Clove	2188	2172	2081	2195	2100	2060	2060	2380	2340	2350	0.01
Nutmeg	15132	16400	16001	17760	18407	18730	19690	21110	22360	23080	0.05
Cinnamon	171	186	150	187	163	277	277	277	320	320	0.07
Grand total including others	2875848	2948558	2899887	3043583	3541804	3172468	3145610	3192640	3457000	3529200	0.02

Source: Spices Board India

Figure No.1

SPICE WISE AREA OF CULTIVATION FROM 2007-17(In Hectares)



Source: Spices Board India.

Data Interpretation:

The figure no.1 is explaining about the growth rate in area of cultivation in hectares of spices in India during 2007-08 to 2016-17. To measure the growth rate, I have used compound annual growth rate method (CARG). Out of all spices Fenugreek cultivated area is raised by 0.16 percent in 2016-17 which is 218430 hectares. Next is the Cinnamon by 0.07 per cent, pepper is 0.05 per cent, Cumin is 0.05 per cent, Coriander is 0.04 per cent, there is no change in chilly and turmeric area of cultivation. It shows that growth rate in seed spices are good because of weather conditions, soil, water facilities, good seeds and marketing facilities and spices Board initiatives. But, because of local conditions, weather, climate change, lack good seed material and marketing problems.

Date Analysis:

The table No. 2 is revealing about the spices production in India during 2007-08 to 2016-17.As per the statistical tool Compound annual Growth Rate analysis the seed spices production growth rate is very good. Area and production growth rate of fenugreek is good by 0.14 per cent, next is the Coriander production by 0.09 per cent, Cumin and small cardamom is 0.07 per cent, Chilly Nutmeg, and Clove is 0.04 percent respectively and Turmeric is 0.02 per cent. This is because of good climatic conditions, availability of good seeds and marketing facilities.

Table No. 2.

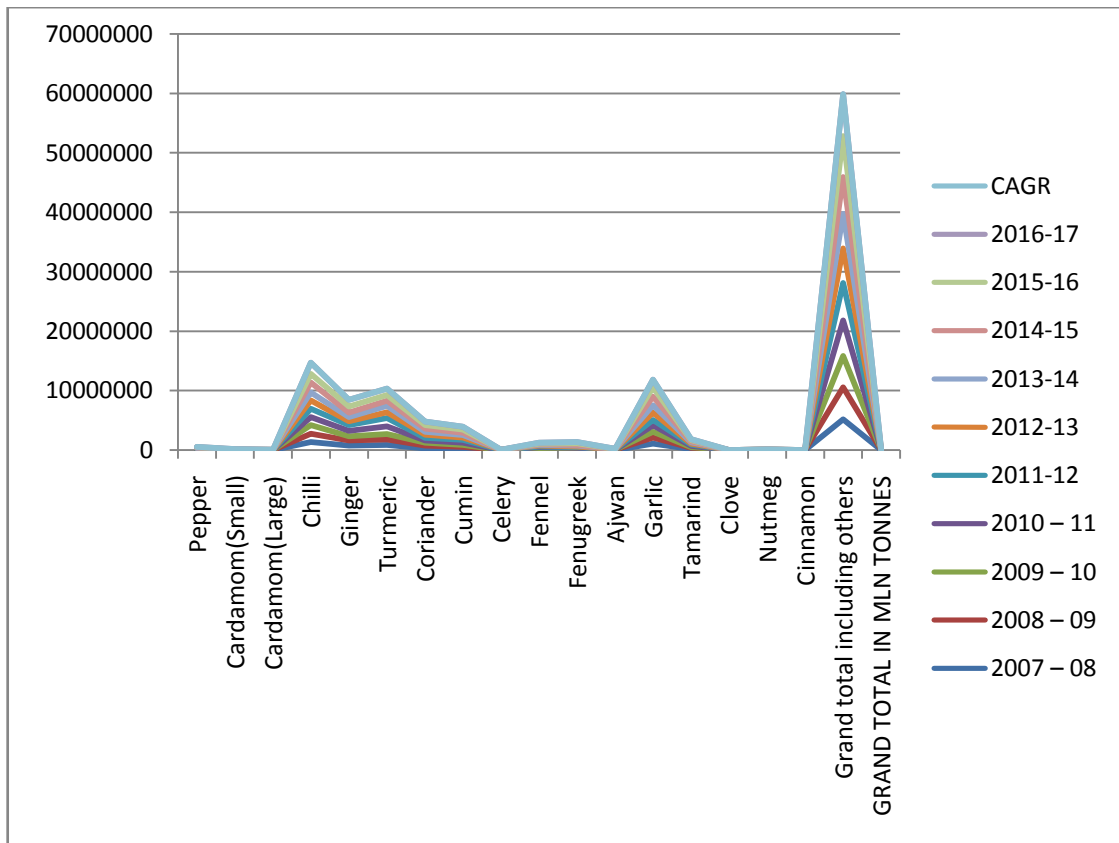
SPICE WISE PRODUCTION OF FROM 2007-08 to 2016-17 (IN MT)

Spices	2007 – 08	2008 – 09	2009 – 10	2010 – 11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
Pepper	50000	50000	50000	48000	43000	65000	37000	70000	48500	57000	0.01
Cardamom(Small)	9450	11000	10075	10380	15000	14000	16000	18000	23890	17990	0.07
Cardamom(Large)	4920	4300	4180	3918	3860	4145	4465	4850	5315	5572	0.01
Chilli	1370853	1381531	1470352	1299191	1448215	1378400	1376400	1621480	1497440	1872010	0.04
Ginger	775439	831607	708256	937043	924417	669350	683160	795820	1025110	1081430	0.04
Turmeric	884306	894590	927912	1268280	1398862	986690	1092630	846250	967060	1051160	0.02
Coriander	286414	471515	501485	372366	428687	503240	496240	546800	572990	609350	0.09
Cumin	264860	283000	303943	403744	462645	394330	445030	372290	503260	485480	0.07
Celery	4239	5329	5248	4609	5271	5510	5510	5510	5510	5510	0.03
Fennel	136984	114277	83576	125710	144112	142940	135930	78570	129350	124610	-0.01
Fenugreek	70155	97533	88979	127850	121775	112870	110530	134100	248350	220160	0.14
Ajwan	20641	18301	8950	19327	28050	26620	26610	17180	16010	13820	-0.04
Garlic	1096459	1003758	975404	1085740	898438	1260210	1221380	1424860	1603500	1271220	0.02
Tamarind	187914	194087	125524	203936	182089	189980	191750	200390	190780	190700	0.00
Clove	872	1002	764	963	1035	1060	1060	1260	1200	1220	0.04
Nutmeg	11326	11362	11271	12088	12138	12730	13210	14400	15170	15460	0.04
Cinnamon	347	363	30	36	37	50	50	50	70	70	-0.16
Grand total including others	5195762	5387092	5286552	5933126	6324920	5801114	5833870	6169900	6901780	7075500	0.03
GRAND TOTAL IN MLN TONNES	5.20	5.39	5.29	5.93	6.32	5.80	5.83	6.17	6.9	7.08	0.03

Source: Spices Board India

Figure No.2

SPICE WISE PRODUCTION FROM 2007-17(IN MT)



Source: Spices Board India

Date Interpretation:

As per the figure no.2 the compound growth rate of spices is very good comparatively 2007-08 to 2016-17. The production of chilly in 2007-08 was 1370853 MT's and 1872010 MT's in 2016-17. The production of fenugreek is 70155 MT's in 2007-08 and 220160 MT's in 2016-17, Coriander production was 286414 in 2007-08 and 609350 in 2016-17, Cumin production in 2007-08 was 264860 and 485480 in 2016-17. During the financial year 2016-17 India has produced 7075500 MT's spices.

Table No.3

Commodity wise export of spices from India during 2007-08 to 2016-17 (Quantity in tonnes)

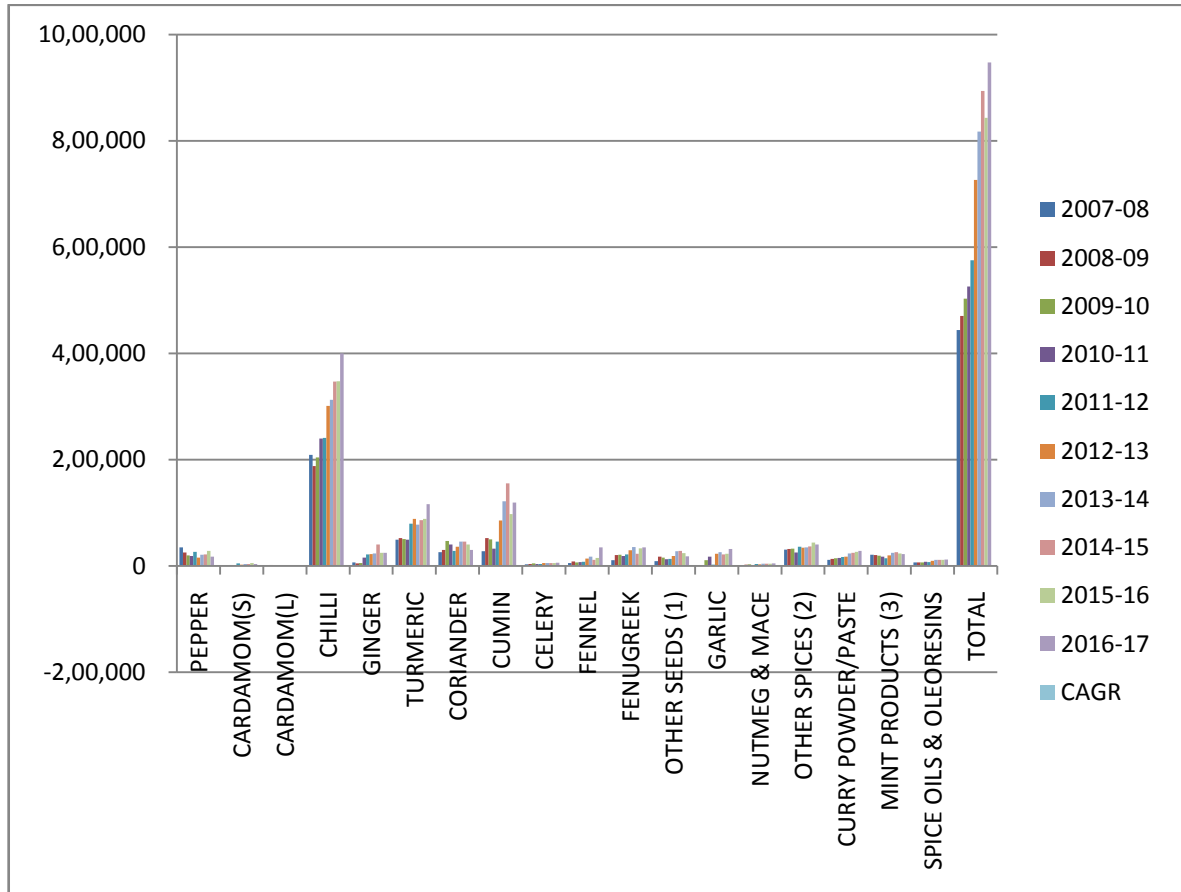
ITEM	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
PEPPER	35,000	25,250	19,750	18,850	26,700	15,363	21,250	21,450	28,100	17,600	-0.07
CARDAMOM(S)	500	750	1,975	1,175	4,650	2,372	3,600	3,795	5,500	3,850	0.25
CARDAMOM(L)	1,325	1,875	1,000	775	935	1,217	1,110	665	600	780	-0.06
CHILLI	2,09,000	1,88,000	2,04,000	2,40,000	2,41,000	3,01,000	3,12,500	3,47,000	3,47,500	4,00,250	0.07
GINGER	6,700	5,000	5,500	15,750	21,550	22,207	23,300	40,400	24,800	24,950	0.16
TURMERIC	49,250	52,500	50,750	49,250	79,500	88,513	77,500	86,000	88,500	1,16,500	0.10
CORIANDER	26,000	30,200	47,250	40,500	28,100	35,902	45,750	46,000	40,100	30,300	0.02
CUMIN	28,000	52,550	49,750	32,500	45,500	85,602	1,21,500	1,55,500	97,790	1,19,000	0.17
CELERY	2,900	3,650	5,000	3,750	3,650	5,171	5,600	5,650	5,310	6,250	0.09
FENNEL	5,250	8,675	6,800	7,250	8,100	13,811	17,300	11,650	15,320	35,150	0.24
FENUGREEK	11,100	20,750	21,000	18,500	21,800	29,622	35,575	23,100	33,330	34,680	0.13
OTHER SEEDS (1)	8,850	17,500	15,500	12,500	13,050	18,442	27,800	28,250	23,880	18,100	0.08
GARLIC	675	760	10,750	17,300	2,200	22,872	25,650	21,610	23,085	32,200	0.54
NUTMEG & MACE	1,300	2,155	3,275	2,100	3,620	3,231	4,450	4,475	4,050	5,070	0.16
OTHER SPICES (2)	30,450	31,805	32,600	25,250	35,900	34,298	34,700	36,500	43,955	40,210	0.03
CURRY POWDER/PASTE	11,500	13,250	14,300	15,250	17,000	17,436	23,750	24,650	26,550	28,500	0.11
MINT PRODUCTS (3)	21,100	20,500	19,000	17,450	14,750	20,039	24,500	25,750	23,250	22,300	0.01
SPICE OILS & OLEORESINS	6,600	6,850	6,750	7,600	7,265	9,515	11,415	11,475	11,635	12,100	0.07
TOTAL	4,44,250	4,70,520	5,02,750	5,25,750	5,75,270	7,26,613	8,17,250	8,93,920	8,43,255	9,47,790	0.09

Source: spices Board India

Data Analysis:

The table No.3 is showing the product wise exports in metric tons of spices from India during 2007-08 to 2016-17. To measure the quantity of exports and growth rate the Compound Annual Growth Rate analysis tool is used. As per the CARG Garlic percentage of export quantity performance is good. Next is the cardamom growth is 0.25%, Fennel growth is 0.24%, Fenugreek is 013%, Ginger is 016% and chilly is 0.07%.

Figure No.3 Commodity wise export of spices from India during 2007-08 to 2016-17 (Quantity in tonnes)



Source: Spices Board India

Data Interpretation:

India is the largest producer, consumer and exporter of all spices. Out of all chilly, turmeric and seed spices exports in quantity growth percentage is very good. During 2016-17 chilly exports were 400250 MT's, Turmeric, 116500 MT's, Cumin 119000MT's, Fenugreek 34680 and other spices contributed a lot. Total spices exported during 2016-17 were 947790 MT's comparatively 111250 MTs in 2007-08.

Table No.4

Commodity wise export of spices from India during 2007-08 to 2016-17 (Value in Rs. lakhs)

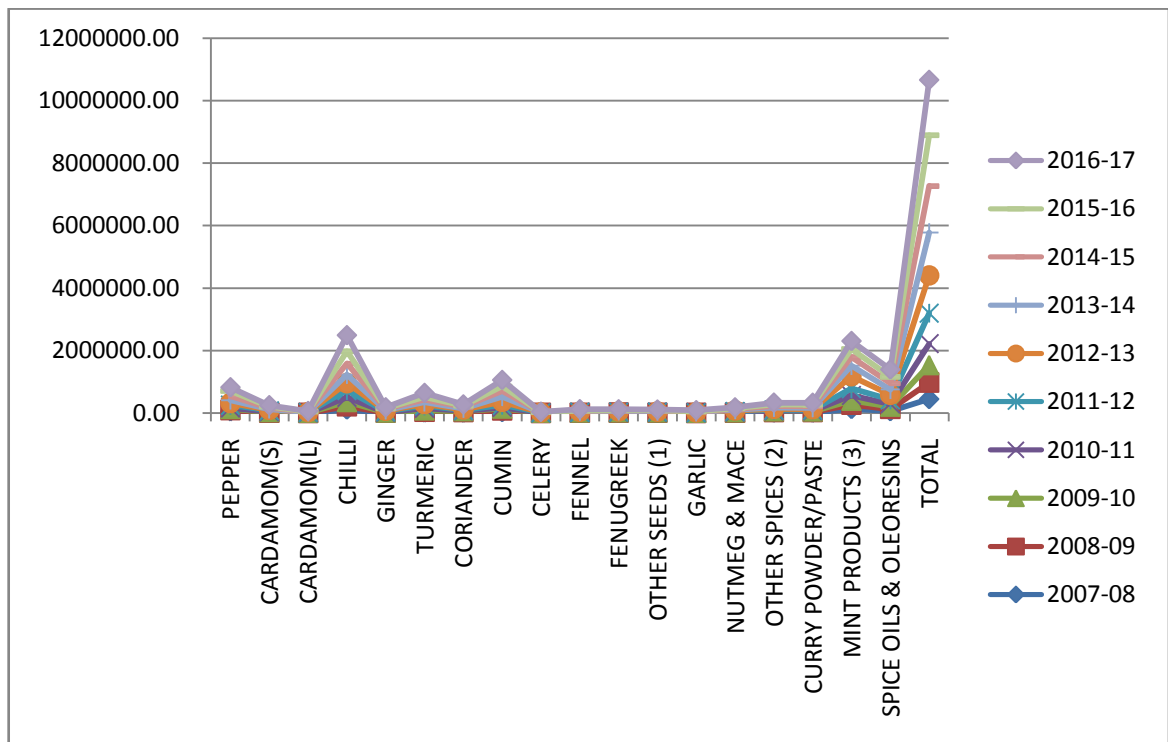
ITEM	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
PEPPER	51950.00	41373.50	31392.50	38318.50	87,813.45	63,810.29	94,002.34	1,20,842.16	1,73,041.50	1,14,312.50	0.09
CARDAMOM(S)	2475.00	4726.50	16570.25	13216.25	36,322.28	21,215.04	28,380.88	32,346.75	44,982.75	42,150.00	0.37
CARDAMOM(L)	1500.00	2280.75	1788.60	4462.90	6,830.00	6,254.59	7,961.15	8,403.90	7,550.70	8,265.50	0.21
CHILLI	109750.00	108095.00	129172.80	153554.00	2,14,408.00	2,38,060.90	2,72,227.20	3,51,710.00	3,99,743.97	5,07,075.00	0.19
GINGER	2800.00	3482.50	4675.00	12131.25	20,420.02	18,725.14	25,614.27	33,133.00	27,595.56	25,705.00	0.28
TURMERIC	15700.00	24857.75	38123.00	70285.15	73,434.40	55,487.70	66,675.85	74,435.00	92,165.00	1,24,189.00	0.26
CORIANDER	11025.00	20378.75	22585.50	16663.25	16,401.85	20,182.59	37,185.65	49,812.50	42,680.50	29,207.50	0.11
CUMIN	29150.00	54400.00	54824.50	39597.75	64,442.05	1,15,306.61	1,60,006.00	1,83,820.00	1,53,113.00	1,96,320.00	0.24
CELERY	1325.00	2333.00	2662.50	2585.90	2,340.05	2,977.26	3,661.48	4,302.10	5,328.24	6,246.00	0.19
FENNEL	2850.00	4315.00	5623.60	6588.25	7,209.20	10,466.12	16,001.42	13,165.50	17,239.60	30,875.50	0.30
FENUGREEK	3300.00	7175.25	6972.00	6548.10	7,275.20	10,488.12	13,378.37	13,947.63	23,380.70	18,276.50	0.21
OTHER SEEDS (1)	3125.00	6498.50	5890.00	5558.05	5,881.25	11,178.60	15,425.65	16,512.50	16,205.75	15,455.00	0.19
GARLIC	400.00	350.25	3042.25	6977.30	1,415.70	6,868.14	8,387.05	8,183.00	15,959.00	30,711.50	0.62
NUTMEG & MACE	2875.00	6074.75	9186.50	9776.80	24,097.51	22,591.87	26,285.62	26,797.50	20,928.25	23,641.65	0.26
OTHER SPICES (2)	12,975.00	17,339.00	19,481.00	16,015.30	32,033.00	30,209.03	41,846.80	44,915.00	58,348.50	50,595.00	0.16
CURRY POWDER/PASTE	11100.00	16375.00	18918.50	21050.50	25,208.25	27,515.66	40,132.03	47,626.00	53,174.50	59,910.00	0.21
MINT PRODUCTS (3)	128050.00	142025.00	118972.00	169679.00	2,22,372.00	3,94,049.95	3,43,042.20	2,68,925.00	2,58,130.47	2,52,750.00	0.08
SPICE OILS & OLEORESINS	56300.00	72050.00	70875.00	91062.45	1,30,438.28	1,55,888.19	1,73,324.85	1,91,090.00	2,14,255.00	2,30,775.00	0.17
TOTAL	443550.00	530025.50	556050.00	684070.70	9,78,342.48	12,11,275.80	13,73,539.26	14,89,967.53	1623822.99	17,66,460.65	0.17

Source: Spices board statistics.

Data analysis:

The table no.4 is taking about the spice wise exports in value of lacks from India during 2007-2017. Here in this table Compound Annual Growth Rate analysis tools are used for the measure the export performance of each spice. India is earning highest foreign exchange through chillies, turmeric and seed spices. It is noticed that export earnings through garlic is higher side of 0.62 percent CARG, next is the cardamom is 0.37 per cent, 0.28 percent is Ginger, 0.26 percent is Turmeric, 0.30 percent is Fennel, Cumin is 0.24 percent. India has earned foreign exchange through all spices are during 2014-15, 2015-16 and 2016-17 is very significant.

Figure No.4
Commodity wise export of spices from India during 2007-08 to 2016-17
(Value in Rs.lakhs)



Source: Spices Board India

Data interpretation:

The figure no.4 is showing the export earning of foreign currency through spices exports from India. During 2016-17 India has earned 17664.60 crores of rupees by exporting different spices to USA, UK, Saudi Arabia, Singapore, Malaysia, Japan, Canada, UAE, Bangladesh, Vietnam and to other prominent trade partners by exporting the major spices like, chilly, turmeric, cumin, coriander, fenugreek, fennel, mustard, cardamom, vanilla, Cinnamon and ginger products, mint and oils and oleoresins. Rs. 5070.75 crores of earned through chilli exports, through Turmeric 1241.89 crores, through cardamom 1143.12 crores, spice oils and oleoresins 2307.75 crore and through cumin 1531.13 crores.

Table No.5

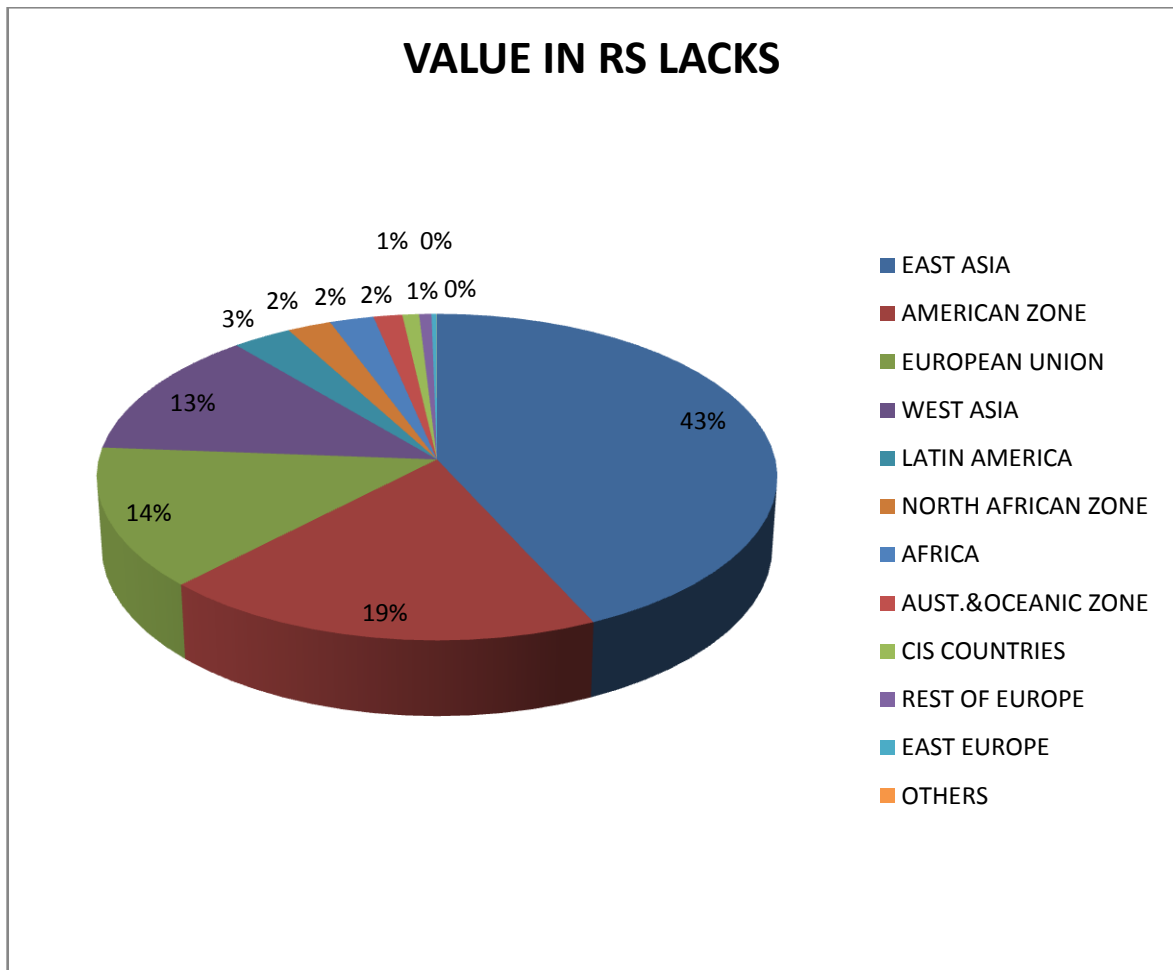
Zone wise exports of Indian spices during 2016-17 (value in Rs.lacks)

ZONE	VALUE IN RS LACKS	Percentage
EAST ASIA	752470	43
AMERICAN ZONE	333600	19
EUROPEAN UNION	242420	14
WEST ASIA	221494	13
LATIN AMERICA	54554	3
NORTH AFRICAN ZONE	40344	2
AFRICA	40562	2
AUST.&OCEANIC ZONE	26512	2
CIS COUNTRIES	15360	1
REST OF EUROPE	11303	1
EAST EUROPE	4767	0
OTHERS	258	0
TOTAL(INCL.OTHERS)	1766461	100

Source: Spices Board statistics

Data analysis:

The table no.5 is taking about the spices exports in value zone wise during 2016-17. 43 per cent of spices were exported to East Asian countries, which is the highest trade partner to India. Next position is the American zone which imported 19 percent of spices from India. European Union zone also good trade partner to India which imported spices from India is 14 per cent. Next good trade partner to India is west Asian countries which imported 13 percent of spices.



Source: Spices Board statistics

Data Interpretation:

Figure No.5 speaking about the amount of foreign exchange India earned through the exports of various spices during 2016-17 from different zones in the world. India has very good trade partners in the globe because; India is the biggest producer and exporter of many spices. During 2016-17 India earned 7524.70 crores from East Asian Zone, 3336.00 crores from American zone, 2424.20 crores from European Zone, 2214.94 crores from East Asia, 545.54 crores from latin America zone. Out of all India has earned 17664.61 crores during 2016-17 by exporting spices to world comparatively 16238.23 crore during 2015-16.

Conclusions

As per the Compound Annual Growth Rate analysis formula pepper cultivation area is reduced by 0.05 per cent and Cumin area of cultivation is increased lot because of good weather, water and good seeds availability. There is no change in chilly area of cultivation almost is the same in 2006-07 to 2016-17. Nutmeg and Cinnamon growth rate noticed is 0.05 & 0.07 percent respectively. Even growth rate of all spices during 2014-15, 2015-16 and 2016-17 is noticed only 2 per cent.

The production of chilly in 2007-08 was 1370853 MT's and 1872010 MT's in 2016-17. The production of fenugreek is 70155 MT's in 2007-08 and 220160 MT's in 2016-17, Coriander production was 286414 in 2007-08 and 609350 in 2016-17, Cumin production in 2007-08 was 264860 and 485480 in 2016-17. During the financial year 2016-17 India has produced 7075500 MT's spices.

India is earning highest foreign exchange through chillies, turmeric and seed spices. It is noticed that export earnings through garlic is higher side of 0.62 percent CARG, next is the cardamom is 0.37 per cent, 0.28 percent is Ginger, 0.26 percent is Turmeric, 0.30 percent is

Fennel, Cumin is 0.24 percent. India has earned foreign exchange through all spices are during 2014-15, 2015-16 and 2016-17 is very significant.

Suggestions:

1. Currently there is no significant growth in area and production of spices during 2007-08 to 2016-17, India has 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 and Spices Board support.
2. An average growth rate of exports of spices from 2007-08 to 2016-17 is 17% only and it is needed to scale up all spices exports in quantity and value wise by practicing best in manufacturing practices, quality and hygienic practices in supply chain management of spices and Spices Board support.

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