

Export Performance of Spices in India: An Empirical Analysis

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Abstract

The Indian spice industry in attaining the vision of becoming the international processing hub and premier supplier of clean and value added spices and herbs to the industrial, retail and food service segments of the global spices market. Spices export from India continued its upward trend and crossed the milestone of US \$ 4 billion mark for the first time in the history of spices export. India produces 75 out of the 109 spices listed out by the International Organization for Standardization (ISO), earning the name 'Spice Bowl of the World'. Indian spices export basket also is diverse and vibrant with around 225 spices and spice products which are exported to more than 180 countries. Indian spice exports contribute nine Percent to India's total agri-export and over 40 Percent of India's horticultural exports. The leading destinations among them were China, the USA, Bangladesh, Thailand, the UAE, Sri Lanka, Malaysia, the UK, Indonesia, and Germany. These nine destinations contributed more than 70 Percent of the total export earnings. There is high competition as spices economy has shifted to consumer driven enterprises, rather than producer driven economy. India emerged as a reliable supply of spices to the world market. The projection data explains that export performance of spices in India has an increasing trend. There is scope for improvement for increasing the India's share in the global market.

Keywords: Quantity of Spices, Export of Spices, Spice Products, Leading Destinations.

1.1 Introduction

The Indian spice industry in attaining the vision of becoming the international processing hub and premier supplier of clean and value added spices and herbs to the industrial, retail and food service segments of the global spices market. India, with a large and diverse agriculture, is among the world's leading producer of cereals, milk, sugar, fruits and vegetables, spices, eggs and seafood products. Indian agriculture continues to be the backbone of our society and it provides livelihood to nearly 50 Percent of the population. Economic development is one of the main objectives of every country in the world and economic growth is fundamental to economic development. Export is considered as one of the important accelerators of growth. India is the largest exporter of spice and spice items. India is the major producer, consumer and exporter of spices in

the world. India grows over 75 different varieties of spices because of varied agro-climatic conditions and soil types. Indian spices are popularly known for their flavour both in the domestic and international market. They are not only indispensable for the dietary pattern but are also known for their medicinal and curative effects since time immemorial. Each state in India has been bestowed with some spices. With the growing awareness of ill effects of synthetic chemicals, drugs and medicines, people are now switching towards traditional system of medicines where spices like ginger, turmeric, chilies, and the like..., are widely used.

1.2 Indian Spices

Indian spices scored its recognition in the world for centuries. At present scenario, even the western countries are very much aware about the importance

of spice, its bi-products and its various value-added products. Yet this time the Indian spices is being in demand due to varying Food Habits and Middle East countries, of people in American and European countries. Spices are grouped basically as major and minor spices in terms of availability, use, importance and demand. 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 (Gandhi, 2006).

The spices grown in the country are mainly consumed by the large domestic market. That is, 94 percent of the total production of spices in India is domestically consumed and the remaining six percent is exported. India's spices exports have reached another milestone by crossing the one billion US dollar mark. Despite the COVID Pandemic, spices export from India has continued its upward trend during 2020-21 and has attained an all-time high of US \$ 4.0 billion mark for the first time in the history of spices export and the same trend continued during 2021-22. The export of spices/spice products from the country has been 14,04,357 tonnes valued Rs.31,761 crore (3952.60 million US\$). (*Spices Board India, Trade Information and Statistics, 2023*)

The country exported spices worth US\$ 4,102.29 million in 2021-2022, the exports of spices from India increased by 6.62 percent to US\$ 330.46 million. In 2021-22, India exported 1.53 million tonnes of spices. India is the largest exporter of spices globally. As per the Directorate General of Foreign Trade (DGFT), India exported \$ 4.1 billion worth of spices in 2021-22. From this share, \$ 1.8 Billion constituted core spices - dried chilli, cumin, and turmeric, followed by over US\$ 1.2 Billion exports of mint

products, spice oils, and oleoresins. State wise, Gujarat, Andhra Pradesh, and Kerala alone account for almost 50 Percent of the country's total spices exports. However, of the three, Gujarat witnessed a quicker and higher export growth with a CAGR of 19 Percent, compared to the southern states. But for chilli specifically, Andhra Pradesh and Telangana contributed to over 60 Percent of India's chilli exports in 2021. Besides these states, in the same year, even Uttar Pradesh and Maharashtra were among the leading spice exporting territories. (*Pranbihanga Borpuzari, The Economic Times, 2022*).

1.3 Objective of the Study

The Main Objective of this Paper is to Study the Export Performance of Spices in India.

1.4 Data Sources and Methodology

In order to fulfill the above objectives, this study is based on secondary data relating to the area of cultivation, production of different spices in India and domestic and export market of Indian spices. The data was collected from the published sources of Annual reports (various issues 1990-91 to 2018-19), Statistical Year Book (various issues 1990-91 to 2018-19) and Spices Export Reviews (various issues 1990-91 to 2018-19) of Spices Board, Cochin. The study covers the period between 1990-91 to 2018-19 (29 years). The measurement of the export performance has evolved significantly over time in two directions: multidimensional and one-dimensional measures. Export performance can be labeled either as one-dimension/single-proxy measures (that is covering one dimension with one proxy), as one-dimension/multiple-proxy measures, or as multi-dimensional/multiple-proxy measures. The decision to use one-dimensional/ single-proxy measures results in testing every relationship hypothesized separately with each export performance measure in the design. It also explained the reason that one dimension of export performance relates in different

manners to the determinants. And it should not be forced into a single composite measure for one dimension and must be tested separately (Nguyen, 2010). Accordingly,

Compound growth rate of spices export from India was computed using formula:

$$Y_t = abt e^{ut} \dots (1)$$

Where, Y_t = Export, a = Intercept, $b = (1+g)$ regression coefficient t = Time period in years

u_t = Disturbance term for the year 't'

Taking natural log on both sides equation becomes

$$\ln Y_t = \ln a + t \ln b + u_t$$

$$\text{Growth rate} = (\text{Antilog of } b - 1) * 100$$

1.5 Total Quantity of Spices Export in India

The total quantity of spices export in India and its annual growth rate is depicted in Table 1. The total quantity of spices export has increased from 1,09,636 tonnes in 1990-91 to a maximum of 10,63,020 tonnes in the last year of the analysis, which reflects that the total quantity of spices exports in terms of tonnes has increased nearly 10 times during the 29 years of total quantity of spices exports from India to abroad.

Table : 1 Total Quantity of Spices Export in India:1990-1991 to 2018-2019

Year	Total Quantity of Spices Export (in tonnes)	Annual Growth Rate
1990-91	109636	-
1991-92	142104	29.6
1992-93	130734	-8.0
1993-94	175710	34.4
1994-95	154112	-12.3
1995-96	202197	31.2
1996-97	219400	8.5
1997-98	228821	4.3
1998-99	231389	1.1
1999-00	208825	-9.8
2000-01	230000	10.1
2001-02	245000	6.5

2002-03	264107	7.8
2002-04	254382	-3.7
2004-05	348524	37.0
2005-06	350363	0.5
2006-07	373750	6.7
2007-08	444250	18.9
2008-09	470520	5.9
2009-10	525750	11.7
2010-11	502750	-4.4
2011-12	575270	14.4
2012-13	699170	21.5
2013-14	817250	16.9
2014-15	893920	9.4
2015-16	843255	-5.7
2016-17	947790	12.4
2017-18	1028060	8.5
2018-19	1063020	3.4
Mean	437243.41	-
SD	296435.45	-
CV	67.80	-
CAGR	8.15	-

Sources: Spices Export Review (Various Issues – 1990-91 to 2018-19) published by Spices Board, Cochin.

The annual growth rate of total quantity of spices exports has been reported a fluctuating trend over the years with positive as well as negative growth during the reference period. The mean magnitude has recorded 4,37,243 tonnes during the 28 years of total quantity of spices exports. The coefficient of variation explains that the variation of spices export has been registered 68 percent of variation between years in terms of tonnes during the study period. The data explains that the compound annual growth rate has 8.15 percent of growth in total quantity of spices exports in terms of tonnes during the period of reference.

1.6 Total Value of Spices Exports

Spices occupied an important place in India particularly in the context of export of spices. India's spices exports account for 60 percent of the global trade of spices.

**Table: 2 Total Value of Spices Export in India :
1990-1991 to 2018-2019**

Year	Total Value of Spices Export (in crores)	Annual Growth Rate
1990-91	281.87	-
1991-92	380.96	35.2
1992-93	418.63	9.9
1993-94	547.24	30.7
1994-95	607.34	11.0
1995-96	785.89	29.4
1996-97	1180.00	50.1
1997-98	1408.31	19.3
1998-99	1758.02	24.8
1999-00	1861.02	5.9
2000-01	1612.07	-13.4
2001-02	1625.40	0.8
2002-03	2086.70	28.4
2002-04	1911.60	-8.4
2004-05	2350.51	23.0
2005-06	2627.62	11.8
2006-07	3575.75	36.1
2007-08	4435.50	24.0
2008-09	5300.26	19.5
2009-10	6840.71	29.1
2010-11	5560.50	-18.7
2011-12	9783.42	75.9
2012-13	11171.16	14.2
2013-14	13735.39	23.0
2014-15	14899.68	8.5
2015-16	16238.23	9.0
2016-17	17664.61	8.8
2017-18	17929.55	1.5
2018-19	18845.01	5.1
Mean	5773.21	-
SD	6246.39	-
CV	108.20	-
CAGR	15.59	-

Sources: Spices Export Review (Various Issues – 1990-91 to 2018-19) published by Spices Board, Cochin.

India's spices export has reached a milestone by crossing the more than two billion US dollar in 2018-19. The total value of spices exports and its annual growth rate is given in Table 2. The total value of spices exports in India has increased Rs.281.87 crores in the initial year of the study and reached a maximum of Rs.18,845 crores in the last year of the analysis. This shows that the total value of Indian spices exports has been increased 67 times in terms of value during the period of study. The trend of total value of Indian spices has been recorded has an increasing trend most of the years and very few years it has been fluctuating. The annual growth rate of spices export has also been fluctuating over the years. The mean magnitude of total value of spices has recorded Rs.5,773 crores during the study period. The coefficient of variation (108.20 percent) explains that a higher variation in the total value of spices exports between the years. It reveals that the emergence of serious competition among the spices exporting countries. The compound annual growth has registered 16 percent of total value of spices export during the period of analysis.

1.7 Total Production, Domestic and Export Market of Spices

India is one of the largest consumers of spices in the world. The total quantity of spices output and the percentage share of domestic and foreign markets is analysed in Table 3. The total quantity of output of Indian spices has increased from 19,18,390 tonnes in 1990-91 to a maximum of 95,99,900 tonnes in 2017-18 which reflects that the total output of spices has registered nearly five times within 29 years of analysis and the subsequent year it has reduced 92,68,081 tonnes in 2018-19. The annual growth rate has registered a maximum of 36 percent during 2017-18 and the remaining years the annual growth rate the output of spices has been fluctuating and registered both positive and negative growth rate.

The mean magnitude of spices production in India during 29 years of the study which has been recorded 44,41,361 tonnes. The coefficient of variation explains the spices production in India between years during the study period has been registering a wide variation (47.36 percent).

The percentage share of domestic and export market of Indian spices explains that the domestic market has been recorded between 89 to 95 percent of Indian spices consumed within India and 5 to 11 percent of Indian spices has been exported to other countries. The data explains that India is the largest consumer (nearly 90 percent of total production) and only 10 percent of spices has been exported from India. The domestic market of Indian spices in terms of tonnes has been registered 95 percent of domestic consumption in 1990-91 and it has decreased to 89 percent of domestic consumption in the last year of the analysis.

Table 3 Total Quantity of Output, Percentage share of Domestic and Foreign Market of Spices: 1990-91 to 2018-2019

Year	Domestic Market (in tonnes)	Export Market (in tonnes)	Total Production (in tonnes)
1990-91	1871754 (94.5)	109636 (5.5)	1981390 (100)
1991-92	1742116 (92.5)	142104 (7.5)	1884220 (100)
1992-93	2329276 (94.7)	130734 (5.3)	2460010 (100)
1993-94	2396190 (93.2)	175710 (6.8)	2571900 (100)
1994-95	2523058 (94.2)	154112 (5.8)	2677170 (100)
1995-96	1867983 (9.2)	202197 (90.8)	2070180 (100)
1996-97	2419950 (91.7)	219400 (8.3)	2639350 (100)
1997-98	2650549	228821	2879370

	(92.1)	(7.9)	(100)
1998-99	2610691 (91.9)	231389 (8.1)	2842080 (100)
1999-00	2699985 (92.8)	208825 (7.2)	2908810 (100)
2000-01	2650830 (92.1)	230000 (7.9)	2880830 (100)
2001-02	2897430 (92.2)	245000 (7.8)	3142430 (100)
2002-03	2867023 (91.6)	264107 (8.4)	3131130 (100)
2003-04	3558828 (93.3)	254382 (6.7)	3813210 (100)
2004-05	3445016 (90.8)	348524 (9.2)	3793540 (100)
2005-06	3591237 (91.1)	350363 (8.9)	3941600 (100)
2006-07	4030930 (91.5)	373750 (8.5)	4404680 (100)
2007-08	4751512 (91.4)	444250 (8.6)	5195762 (100)
2008-09	4916572 (91.3)	470520 (8.7)	5387092 (100)
2009-10	4760802 (90.1)	525750 (9.9)	5286552 (100)
2010-11	5430376 (91.5)	502750 (8.5)	5933126 (100)
2011-12	5749650 (90.9)	575270 (9.1)	6324920 (100)
2012-13	5101944 (87.9)	699170 (12.1)	5801114 (100)
2013-14	5016620 (86.0)	817250 (14.0)	5833870 (100)
2014-15	5275980 (85.5)	893920 (14.5)	6169900 (100)
2015-16	6058525 (87.8)	843255 (12.2)	6901780 (100)
2016-17	6127710 (86.6)	947790 (13.4)	7075500 (100)
2017-18	8571840 (89.3)	1028060 (10.7)	9599900 (100)

2018-19	8205061 (88.5)	1063020 (11.5)	9268081 (100)
Mean	4004118.6	437243.4	4441362.0
SD	1822098.4	296435.4	2103321.6
CV	45.5	67.8	47.4

Sources: Spices Export Review (Various Issues – 1990-91 to 2018-19) published by Spices Board, Cochin.

The export market of Indian spices shows that nearly six percent of total production in 1990-91 and reached a maximum of 13.4 percent in 2016-17, it reveals that the percentage share of export market of Indian spices in terms of tonnes has increasing trend over the years during the study period. The coefficient of variation explains that the export market of Indian spices has very wide fluctuations (67.8 percent) as compared to variations in domestic market of Indian spices.

1.8 Trend Projection of Export Market of Spices in India: 1990-91 to 2024-25

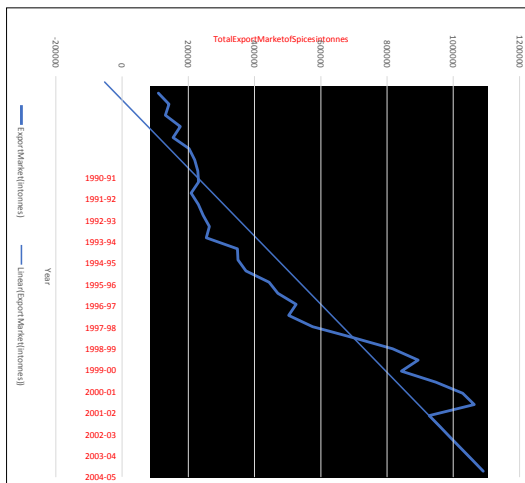
The trend projection of export market of spices in India during 1990-91 to 2024-25 is shown in Table 4. The trend projection calculated from the export data of Indian spices which reveals that there has been an increasing trend during the calculated years. Spices are high export earning commodity and very concentrated, out of the 22 spices which are commercially cultivated in India and ten spices are contributing around 90 percent of the total export earnings. In the last three decades the scenario of spices production as well as export underwent a significant transformation and also significant contribution to the spices economy of India.

Table 4 Trend Projection of Export Market of Spices in India: 1990-91 to 2024-25

Year	Export Market (in tonnes)	x	xy	x ²	y=a+bx
1990-91	109636	-14	-1534904	196	-19978.8
1991-92	142104	-13	-1847352	169	12679.95

1992-93	130734	-12	-1568808	144	45338.67
1993-94	175710	-11	-1932810	121	77997.4
1994-95	154112	-10	-1541120	100	110656.1
1995-96	202197	-9	-1819773	81	143314.9
1996-97	219400	-8	-1755200	64	175973.6
1997-98	228821	-7	-1601747	49	208632.3
1998-99	231389	-6	-1388334	36	241291
1999-00	208825	-5	-1044125	25	273949.8
2000-01	230000	-4	-920000	16	306608.5
2001-02	245000	-3	-735000	9	339267.2
2002-03	264107	-2	-528214	4	371926
2003-04	254382	-1	-254382	1	404584.7
2004-05	348524	0	0	0	437243.4
2005-06	350363	1	350363	1	469902.1
2006-07	373750	2	747500	4	502560.9
2007-08	444250	3	1332750	9	535219.6
2008-09	470520	4	1882080	16	567878.3
2009-10	525750	5	2628750	25	600537.1
2010-11	502750	6	3016500	36	633195.8
2011-12	575270	7	4026890	49	665854.5
2012-13	699170	8	5593360	64	698513.2
2013-14	817250	9	7355250	81	731172
2014-15	893920	10	8939200	100	763830.7
2015-16	843255	11	9275805	121	796489.4
2016-17	947790	12	11373480	144	829148.1
2017-18	1028060	13	13364780	169	861806.9
2018-19	1063020	14	14882280	196	894465.6
2019-20	927124	15	13906860	225	927124.3
2020-21	959783	16	15356528	256	959783.1
2021-22	992442	17	16871514	289	992441.8
2022-23	1025101	18	18451818	324	1025101
2023-24	1057759	19	20097421	361	1057759
2024-25	1090418	20	21808360	400	1090418
Total	18732686		172789720	2030	
a	437243.4138				
b	85118.08867				

Source: Spices Export Review (Various Issues – 1990-91 to 2018-19) published by Spices Board, Cochin.



1.9 Concluding observation

The Indian spices industry is booming with substantial increasing in exports over the past two decades. Spices export from India continued its upward trend and crossed the milestone of US \$ 4 billion mark for the first time in the history of spices export. India produces 75 out of the 109 spices listed out by the International Organization for Standardization (ISO), earning the name 'Spice Bowl of the World'. Indian spices export basket also is diverse and vibrant with around 225 spices and spice products which are exported to more than 180 countries. Indian spice exports contribute nine Percent to India's total agri-export and over 40 Percent of India's horticultural exports. The leading destinations among them were China, the USA, Bangladesh, Thailand, the UAE, Sri Lanka, Malaysia, the UK, Indonesia, and Germany. These nine destinations contributed more than 70 Percent of the total export earnings. India accounts for nearly 56 percent and 35 percent in terms of world trade and value in the world spices trade. The blooming spices market also possess good opportunities for Indian spices industry to provide quality spices at competitive prices. India faces stiff competition from China, Malaysia and Vietnam in terms of pricing of the products. Manufacturers should therefore ensure consistent supply, quality products, pricing and marketing

strategy to increase the India's share in world spices exports. The demand scenario for major and minor spices are increasing at a higher rate in domestic as well as global market. Spices have been integral part of the Indian diet, and the demand for spices growing much fast. Indian spices scored its recognition in the world for several decade. At present scenario, the advance countries are very much aware about the importance of spices, it's by-products and its various value-added process. This is the time the Indian spices is being in huge demand due to varying food habits in middle east countries and most of the western countries.

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