

## Growth and export performance of major seed spices

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### Abstract

India is agriculture based country and earns significantly from export of the agricultural commodities. India is the largest producer and exporter of the spices in the world. Arid and semi arid regions of Rajasthan are very conducive for the production of spices. Export performance of four major spices of Rajasthan was calculated using Compound Annual Growth Rate (CAGR) in terms of quantity and value. UAE is the only importer country that was scored highest rank in all the four spices. The results revealed that UAE, USA, UK, Malaysia, South Africa, Algeria and Sri Lanka have vast potential for the export of all the four spices. Malaysia, Vietnam, USA, YAR are the largest importer of coriander, cumin, fennel and fenugreek, respectively in term of quantity.

### Introduction

India is known as the home of spices. Spices were the most valuable products of trade in agriculture during ancient and medieval world and had a long history of trading with the ancient civilizations of Rome and China. Globally, Indian spices are the most preferred, due to exquisite aroma, texture, taste and medicinal properties. The seed spices can be used as anti-proliferative, anti-hypercholesterolemia, anti-diabetic and anti-inflammatory (Rathore *et. al.*, 4). India is the world's largest producer, consumer and exporter of spices. The country grows 109 types and exports about 75 types of spices. India primarily exports spices such as pepper, chilli, turmeric, ginger, cardamom, coriander, cumin, fennel, fenugreek, celery, garlic, tamarind and vanilla. Processed spices such as spice oils and oleoresins, mint products, curry powder, spice powders, blends and seasonings are also exported. There has been ever increasing demand of seed spices and importing countries look at India as consistent source. No other country in the world has such a broad supply base of seed spices. Prominent states where seed spices produced largely are Rajasthan and Gujarat due to the climatic conditions.

In the present study, four major spice crops *viz.*, coriander, cumin, fennel and fenugreek were selected considering their overall production, area and the export quantity. The area and production of these spices in Rajasthan as well as in India are shown in Table 1 and Table 2 respectively.

### Materials and methods

Compound Annual Growth Rate (CAGR) was calculated to measure the past performance of export of major spices of Rajasthan in top seven importing countries

during the period of 2009-2013. The indicators considered to study the growth rate were quantity and value (Babu *et al.*, 1). The growth in these parameters was analyzed using growth function.

$$Y = ab^{tu}$$

Where,

Y = Dependent variable for which growth rate is estimated

a = Intercept

b = Regression coefficient

t = Time

u = Random error

OLS was applied to estimate the parameters of above equation from which compound growth rate (Palanisami *et. al.*, 3) was calculated by using given formula

$$r = (e^b - 1) \times 100$$

Where,

r = Rate

e = Exponential

### Results and discussion

Overall export status during 2010–14 of coriander, cumin, fennel and fenugreek are shown in table 3. It is observed that from selected four spices cumin is maximum exported commodity during 2013-14. It is also observed that cumin, fennel and fenugreek are having increasing trend in their export quantity as well as in value term. In year 2013-14, 121500 Tones of the cumin was exported that was having the value of approximately ₹160,000 Lakhs.

Coriander is exported to more than 19 different countries. The major importers are Malaysia, UAE, Saudi Arabia and South Africa, constitute more than 50

**Table 1:** Area, production and rank of major spices in Rajasthan during 2008-2012

(Area in Hectare, production in Tons)

Seed Spices	Rank in term of Area	2008-09		2009-10		2010-11		2011-12	
		Area	Production	Area	Production	Area	Production	Area	Production
Coriander	1	250516	280306	232139	281076	197891	218899	267827	329402
Cumin	2	165703	39362	203854	80531	330634	114925	467976	177835
Fennel	2	7499	6249	8754	5601	26967	26157	NA	NA
Fenugreek	1	62894	77319	58917	70328	80378	94200	82350	87382

Source: Spice Board of India

**Table 2:** Area and production of major spices in India during 2008-2013

(Area in Hectares , Production in Tonnes)

Spices	2008 – 09		2009 – 10		2010 –11		2011-12		2012-13	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Coriander	537327	471515	530789	501485	474250	372366	362148	428687	531070	503240
Cumin	527132	283000	517133	303943	625087	403744	843401	462645	593980	394330
Fennel	74149	114277	53497	83576	81890	125710	92446	144112	99610	142940
Fenugreek	74512	97533	71985	88979	94760	127850	96304	121775	93110	112870

Source: Spice Board of India

**Table 3:** Export status of major seed spices from India

(Qty. in tones & value in lakhs)

Seed Spices	2010 -11		2011 -12		2012 -13		2013 -14	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Coriander	40,500	16663.25	28,100	16,401.85	35,902	20,182.59	45,750	37,185.65
Cumin	32,500	39597.75	45,500	64,442.05	85,602	115,306.61	121,500	160,006.00
Fennel	7,250	6588.25	8,100	7,209.20	13,811	10,466.12	17,300	16,001.42
Fenugreek	18,500	6548.10	21,800	7,275.20	29,622	10,488.12	35,575	13,378.37

**Table 4:** Spice wise share of India's export to major importer countries during 2012-13

Seed Spices	Major importer from India
Coriander	Malaysia (25.77%), UAE (16.32%), Saudi Arabia (8.47%), South Africa (5.92%)
Cumin	Vietnam (12.77%), USA (11.17%), UAE (9.86%), Egypt (ARE) (6.42%), Nepal (5.06%), Spain (4.71%), Brazil (4.51%)
Fennel	USA (23.45%), Malaysia (21.38%), Pakistan (12.66%), Saudi Arabia (6.24%)
Fenugreek	YAR (12.16%), Egypt (ARE) (12.53%), China (11.39%), USA (5.88%), UAE (6.85%), Japan (3.38%)

per cent of the total export share. Cumin is imported by more than 50 countries of the world. But the major importer countries are Vietnam, USA, UAE and Egypt. Fennel and fenugreek is also exported to more than 20 countries. The major share of export quantity of fennel goes to USA, Malaysia, Pakistan and Saudi Arabia whereas major share of fenugreek export quantity goes to YAR, Egypt, China, USA and Japan. The percentage wise share of the importer countries in selected spices are shown in Table 4.

The growth rate analysis of coriander is presented in Table 5. In terms of quantity, coriander export to USA registered a growth of 24.73% per annum followed by Malaysia (0.70%). Negative growth rates were registered for UK (-13.58%), Saudi Arabia (-7.96%), UAE (-7.78%), South Africa (-5.07%) and Nepal (-1.29%). Similar trend in the growth of coriander export in value terms was observed in USA. In term of value, export to USA registered the highest growth (30.34%) followed by other countries namely Malaysia (9.97%), UK (9.97%), South Africa (5.76%) and Nepal (5.02%). In case of UAE (-2.86%) and Saudi Arabia (-0.50%), the growth rates were negative in value terms.

The growth rate of quantity and value of cumin export are presented in Table 6. It was observed that in term of quantity and value, cumin export registered a highest growth rate of 3836.98% and 3258.23%, respectively in case of Vietnam. The high increase in growth rate is due to subsequent change in term of export quantity i.e. 0.55 MT in 2009-10 to 10933.90 MT in 2012-13. Other countries like Spain (93.90%), Egypt (ARE) (47.99%), USA (39.10%), UAE (25.36%) are also showing positive growth rate in terms of quantity. Nepal (-15.30%) and Brazil (-3.44%) were showing negative growth rate in term of quantity. In terms of value, the growth rate is positive for Spain (107.92%), Egypt (ARE) (60.32%), USA (50.83%), UAE (35.12%) and Brazil (4.19%) except in Nepal (-10.68%).

Results of growth rate of fennel are presented in Table 7. Fennel export in term of quantity to Sri Lanka registered a

growth of 101.58 per cent per annum followed by USA (51.29%), Pakistan (26.36%), Malaysia (24.11%), Saudi Arabia (11.96%) and UAE (1.01%). For UK (-8.79%), the growth rate were negative. Similar trend in the growth of Fennel export in value term was observed in Sri Lanka. In term of value earned by Fennel, export to Sri Lanka registered the highest growth (82.76%) followed by other countries USA (42.90%), Pakistan (26.36%), Malaysia (20.80%), UAE (2.02%) and UK (0.03%). For Saudi Arabia (-2.08%) the growth rates were negative in value terms.

The growth rate of quantity and value of Fenugreek export are presented in Table 8. It was observed that in term of quantity and value, Fenugreek export shows a highest growth rate of 395.30 per cent and 484.16 per cent, respectively in case of China. Other countries like Egypt ARE (43.62%), USA (27%), Sri Lanka (24.48%), YAR (8.44%) are also showing positive growth rate in terms of export quantity. But UAE (-10.15%) and Japan (-8.61%) are showing negative growth rate in term of quantity. In value term, the growth rate is positive for Egypt (ARE) (3.87%), USA (35.26%), Sri Lanka (25.61%) and YAR (41.61%) but have negative growth rate in UAE (-6.95%) and Japan (-4.69%).

Ranking of the countries on the export quantity for triennium ending (2010-13) was also calculated. It was observed that there are seven countries in the world that are importing all the four spices from India. These importing countries are UAE, USA, UK, Malaysia, South Africa, Algeria and Sri Lanka. UAE is the only importer country that was scored highest rank in all the four spices. It ranked second in cumin and coriander both, third in fenugreek and fifth in fennel. The top three ranked countries in coriander import are Malaysia, UAE and Saudi Arabia whereas in Cumin, Vietnam, UAE and USA got the top three ranks. In Fennel and Fenugreek, the top three importer countries are USA, Pakistan, Malaysia and YAR, Egypt (ARE), UAE respectively.

The economic liberalization policies and formation of WTO during the nineties have profound impact on Indian agricultural exports in general and on Spices Exports in

**Table 5:** Growth rates of quantity and value of exported coriander (2009-13)

S. No.	Country	Compound Annual Growth Rate	
		Quantity	Value
1	Malaysia	0.70	9.97
2	U.A.E.	-7.78	-2.86
3	Saudi Arabia	-7.96	-0.50
4	South Africa	-5.07	5.76
5	U.K.	-13.58	9.97
6	Nepal	-1.29	5.02
7	U.S.A.	24.73	30.34

**Table 6:** Growth rates of quantity and value of exported cumin (2009-13)

S. No.	Country	Compound Annual Growth Rate	
		Quantity	Value
1	Vietnam	3836.98	3258.23
2	U.S.A.	39.10	50.83
3	U.A.E.	25.36	35.12
4	Egypt (A.R.E.)	47.99	60.32
5	Nepal	-15.30	-10.68
6	Spain	93.09	107.92
7	Brazil	-3.44	4.19

**Table 7:** Growth rates of quantity and value of exported fennel (2009-13)

S. No.	Country	Compound Annual Growth Rate	
		Quantity	Value
1	U.S.A.	51.29	42.90
2	Malaysia	24.11	20.80
3	Pakistan	26.36	26.36
4	Saudi arabia	11.96	-2.08
5	U.K.	-8.79	0.30
6	U.A.E.	1.01	2.02
7	Sri lanka	101.58	82.76

particular. The Agreement on Agriculture (AOA), The Agreement on Sanitary and Phyto-Sanitary (SPS) Measures, The Technical Barriers to Trade (TBT), Safeguards and Subsidies and Countervailing Measures (SCM) are some of the outcomes of WTO having implications on Indian Spices Exports in terms of growth.

The growth of spices export could be attributed to the trade liberalization policies. Through re-plantation, value-addition and focus on organic cultivation, productivity could be increased and such increase in productivity would reduce the unit cost production and improve the price competitiveness. Suitable policy measures are to be devised and implemented as a long strategy for cashing in on export opportunities by way of increased productivity, investment in market infrastructures and up gradation of spices quality.

### Conclusion

The results revealed that there is a great potential of export of seed spices. The quantity of Coriander exported to USA and Malaysia showed a positive while UK, Saudi Arabia, UAE, South Africa and Nepal depicted negative growth. The value of Coriander export to USA, Malaysia, UK, South Africa and Nepal showed positive growth whereas UAE and Saudi Arabia depicted negative growth. It was analyzed that, Cumin export registered a highest growth rate of 3836.98% and 3258.23% respectively in case of Vietnam. Other countries like Spain, Egypt (ARE), USA and UAE showed positive and Nepal showed negative growth rate in terms of export quantity and value. It was interesting to note that Sri Lanka, USA, Pakistan, Malaysia, Saudi Arabia and UAE registered positive growth whereas UK

**Table 8:** Growth rates of quantity and value of exported fenugreek (2009-13)

S.No.	Country	Compound Annual Growth Rate	
		Quantity	Value
1	Y.A.R	8.44	3.87
2	Egypt	43.62	41.62
3	China	395.30	484.16
4	U.S.A.	27.00	35.26
5	Japan	-8.61	-4.69
6	U.A.E.	-10.15	-6.95
7	Sri lanka	24.48	25.61

registered negative growth in term of quantity in Fennel. Similar trend in the growth of Fennel export value term was observed except UK had positive growth whereas Saudi Arabia had negative growth rate. Fenugreek export showed a highest growth rate of 395.30% and 484.16% respectively in case of China. Other countries like Egypt ARE, USA, Sri Lanka, YAR depicted positive growth but UAE and Japan registered negative growth rate in terms of export quantity and value. The results revealed that UAE, USA, UK, Malaysia, South Africa, Algeria and Sri Lanka have a vast potential for the export of all the four spices.

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