Growth and Prospects of Export of Major Seed Spices from India

ANAND AGRICULTURAL UNIVERSITY
Anand - 388 110 (Gujarat)

Department of Agricultural Economics and WTO Cell

B. A. College of Agriculture
Anand Agricultural University, Anand (Gujarat)

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: Authors :

V.K. Gondalia

K.B. Kathiria
K.S. Jadav
Ganga Devi
Rachana Bansal
A.S. Shaikh
Jignesh Macwan

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Author	:	V.K. Gondalia, K.B. Kathiria, K.S. Jadav, A.S. Shaikh, Ganga Devi, Rachana Bansal and Jignesh Macwan
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Dr. N. C. Patel
Ph.D.(IIT, Kharagpur)
Vice Chancellor

ANAND AGRICULTURAL UNIVERSITY
ANAND-388 110, GUJARAT
Tel. : (O) +91-2692-261273
Fax : (O) +91-2692-261520
Email : vc@aau.in

Date : 25/02/2019

MESSAGE

India, 'The Land of Spices' is one of the largest producer, consumer and exporter of spices in the world. The glory of Indian spices is known throughout the world. The varying climatic conditions in the country provide ample scope for the cultivation of a variety of spices. Indian spices are popular for their flavour and aroma in domestic as well as in the international markets.

Seed spices occupy a prominent place in the total basket of spices of the country and play a significant role in our national economy. The production and export of seed spices in the country has shown significant rise during last decade. Over the years, our spice community has evolved and matured as a technology-based, quality-conscious, customer-centric, market-driven industry.

This book is aimed for those who are interested in export business of seed spices, can find the complete information about potential, growth and prospects in Indian seed spices production and export, their quality specifications and role of spice board in export promotion. It will be informative and useful to consultants, entrepreneurs, start-ups, technocrats, research scholars, students and farmers.

I congratulate all the authors of this publication for their exemplary team work and efforts.

(N. C. PATEL)

Acknowledgement…

This book is partially based on the results of research studies conducted under WTO Cell, Department of Agricultural Economics, B. A. College of Agriculture, Anand Agricultural University, Anand during the year 2017-18.

The primary objective in writing this book is to provide information about the growth and present scenario in exports of major seed spices from India and also to acquaint readers about opportunities and challenges lying in this field. Secondly, farmers and others who are interested in export of seed spices are not fully aware about the general norms and procedure of export. Therefore, such information has also been included in this book. We hope that this book will be helpful to readers in planning and making them successful in agri-export business.

We thank Dr. N. C. Patel, Vice Chancellor, Anand Agricultural University for giving us an opportunity to prepare a book on export opportunities in major seed spices. We record our profound appreciation of the keen interest and strenuous efforts put in by Dr. K. B. Kathiria, Director of Research and Dean PG Studies, Anand Agricultural University, Anand, in bringing out this book promptly.

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Finally, we thank the referees for reviewing our script and providing valuable comments and suggestions. Any and all errors & omissions are the sole responsibility of the editors.

- Authors

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Acronyms

APEDA	Agricultural Products Export Development Authority
APMC	Agricultural Produce Market Committee
ASTA	American Spice Trades Association
CAGR	Compound Annual Growth Rate
DGFT	Directorate General of Foreign Trade
ECGC	Export Credit Gaurantee Corporation of India
EPA	Environmental Protection Agency
EPC	Export Promotion Council
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FOB	Free On Board
FTA	Free Trade Agreement
FTP	Foreign Trade Policy
g	Gram
GAP	Good Agricultural Practices
GoG	Government of Gujarat
GoI	Government of India
GoR	Government of Rajasthan
GSO	GCC Standardization Organization
GST	Goods & Services Tax
ha	Hectare
HACCP	Hazard analysis Critical Control Point
HS Code	Harmonised System Code
ICAR	Indian Council of Agricultural Research
IEC	Importer Exporter Code
II	Instability Index
INCOTERMS	International Commercial Terms
ITC	Indian Trade Classification
kg	Kilogram
LC	Letter of Credit
MDA	Market Development Assistance
MEIS	Merchandise Export from India Scheme
mg	Milligram

MRL	Maximum Residue Limit
NABARD	National Bank for Agriculture and Rural Development
NGO	Non Government Organization
NHB	National Horticultural Board
PTA	Preferntial Trade Agreement
q	Quintal
Qty	Quantity
RCMC	Registration Cum Membership Certificate
Rs	Indian Rupees
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America
USD	US Dollar
USFDA	US Food and Drug Administration
WTO	World Trade Organization

Executive Summary

India is the world's largest producer, consumer and exporter of spices. Seed spices are important export-oriented commodities. They occupy a prominent place in the total basket of spices of the country and play a significant role in our national economy. The production and export of seed spices has shown significant rise during last decade.

The major seed spices of India are cumin, coriander, fenugreek and fennel as they are cultivated in sizable area. The minor seed spices include ajwain, dill, celery, aniseed and kalongi. One or the other seed spice is cultivated throughout India. But the prominent states where seed spices produced largely are Rajasthan and Gujarat. They are known as "Seed Spices Bowl" and contribute more than 80% of total seed spices production in India.

There has been ever increasing demand of seed spices from importing countries. Some facts related to the production and export of major seed spices are as under:

Cumin

- India is the largest producer of cumin in the world contributing about 70.77% in production followed by Syria (13.16%), Turkey (5.15%) and UAE (2.8%).
- India produced 5.03 lakh tons of cumin from 8.08 lakh ha of land during the year 2015-16.
- The area, production and productivity of cumin in India increased by 10.33, 16.45 and 5.55 per cent annually during the year 2006-07 to 2015-16, respectively.
- Gujarat and Rajasthan emerged as the major cumin producing states in the country contributing about 60 and 40 per cent, respectively.
- India exported 1.19 lakh tons of cumin worth of Rs 1963 crore during the year 2016-17.
- The export of cumin from India reported 18.25% growth per annum in quantity and 23.80% in terms of value during the year 2007-08 to 2016-17.
- Vietnam emerged as the largest export destination for Indian cumin with a share of 32.07% followed by USA (8.43%), Bangladesh (7.86%) and UAE (6.60%).

Fennel

- India produced 1.29 lakh tons of fennel from 76.0 thousand ha of area during the year 2015-16.
- Looking to the trends, there is no significant growth in area, production and yield of fennel during the year 2006-07 to 2015-16.
- Gujarat ranked first in production with 74.81% share followed by Rajasthan (23.75).
- India is the largest exporter of fennel with 24.33% share in global fennel export..
- India exported about 35 thousand tons of fennel worth of Rs 309 crore during the year 2016-17.
- The trend in export reported significant growth in quantity (18.27%) as well as value (22.89%) during the year 2007-08 to 2016-17.
- Vietnam ranked first with 50.29% share in total fennel export from India followed by Malaysia (7.74) USA (7.63%) and Saudi Arab (6.10%).
- India is also the largest importer of fennel which accounted for 14.65% share in global imports.

Coriander

- India is the largest producer of coriander in the world contributing around 50% in the production.
- India produced about 5.85 lakh tons of coriander seeds from 5.82 lakh ha area during the year 2015-16.
- Rajasthan ranked first in production with a share of 34.05% followed by Gujarat (24.22%) and Madhya Pradesh (18.93).
- Coriander was exported in form of whole seeds as well as in powder form in which seeds accounted for 64.14% while powder form accounted for 32.27% share**.**
- Malaysia is the largest export destination for Indian coriander seeds with 51.10% share, whereas in case of coriander powder, South Africa emerged as the largest export market with 20.42% share.
- In world market of coriander seeds, India emerged as the largest export as well as importer with 19.31% and 22.31% share, respectively. It is worth to notice that India's import (40078 thousand USD) was larger than its export (31966 thousand USD). Similarly, in case of coriander powder also India emerged as the largest exporter in the world with a share of 45.02%.

Fenugreek

- India produced 2.48 lakh tons of fenugreek from 2.28 lakh ha area during the year 2015-16.
- Fenugreek reported significant growth in area and production which increased at 13.67 and 15.15% per annum during the year 2006-07 to 2015-16, respectively.
- Rajasthan is the largest state in production of fenugreek in the country with a share of 76.65% followed by Gujarat (5.71%) and Haryana (3.09%).
- India exported 34680 tons of fenugreek worth of Rs 182.77 crore during the year 2016-17.
- The trends in export of fenugreek showed significant growth in quantity terms (7.32% per annum) as well as in value terms (16.76% per annum) from the year 2007-08 to 2016-17.
- UAE is the largest export destination for Indian fenugreek with 8.06% share followed by Yemen (7.60%), USA (7.28%) and Saudi Arab (6.84%).

In nutshell, overall scenario of production and export of above mentioned seed spices in India is very much positive and encouraging. The trends in export of cumin, fennel and fenugreek in terms of quantity as well as value showed significant growth during last decade indicating good prospects for the future. In recent times, quality of seed spices has become a major concern which needs to be tackled to maintain and enhance the export.

Chapter 1
Introduction

Seed Spices are annual herbs, whose dried seeds are used as spices. They are nature's gift to humankind and add flavour to our food in addition to having preservative and medicinal value. There are about 20 seed spices grown in India. The most prominent among them are cumin, coriander, fennel, fenugreek, ajwain, dill, nigella, celery, aniseed and caraway.

Seed spices occupy a prominent place in the total basket of spices of the country and play a significant role in our national economy. Seed spices are primarily used for flavouring, seasoning and imparting aroma in variety of food items and beverages. Besides importance in food industry, the seed spices have medicinal properties and thus are used in various pharmaceutical preparations and also in cosmetic industry. Seed spices are important export oriented commodities and about 10 per cent of the production is exported in raw as well as value added products realizing foreign exchange worth of rupees about 3000 crore (Spice Board, 2017). The usage of spices by consumers is increasing worldwide because they are completely natural, rather than artificial additives for seasoning and flavouring of foods. Thus an increasing trend in export of seed spices has been observed in the last decade.

The major seed spices of India are cumin, coriander, fenugreek and fennel as they are cultivated in sizable area. The minor seed spices include ajwain, dill seed, celery, aniseed and kalongi. One or the other seed spice is cultivated throughout India. But the prominent states where seed spices produced largely are Rajasthan and Gujarat. They are known as "Seed Spices Bowl" and contribute more than 80% of total seed spices production in India (NHB, 2017).

There has been ever increasing demand of seed spices and importing countries consider India as consistent source. No other country in the world has such a broad supply base of seed spices. The climatic conditions prevailing in Rajasthan, Gujarat and some other adjoining states in the arid and semi-arid regions are very much conducive for growth and development of wide range of seed spices. Still there is a tremendous scope for increasing production of seed spices by introducing them in new areas. The higher production can be achieved easily through high yielding and disease resistant varieties as well as better application of cultural practices, biotic stress management and putting more area under these crops.

Current status

The current status in area, production and export of major seed prices in India is presented in Table 1. It shows that India produced about 5.03 lakh tons of cumin from an

area of 8.08 lakh ha during the year 2015-16. Out of which 1.29 lakh tons of cumin worth of Rs.2152 crore was exported to various countries of the world. Similarly, it produced about 1.29 lakh tons of fennel from an area of 0.76 lakh ha out of which 0.37 lakh tons of fennel worth of Rs 324 crore was exported. In case of coriander, India produced about 5.85 lakh tons from which 0.32 lakh tons of coriander worth of Rs. 316 crore was exported. Whereas in case of fenugreek, the country produced about 2.48 lakh tons from an area of 2.28 lak ha and exported about 0.35 lakh tons of fenugreek worth of Rs. 194 crore.

Table 1. Current status in area, production and export of major seed spices in India

Sr. No.	Seed Spice	Area (2015-16)	Production (2015-16)	Export (2016-17)		
		lakh ha	lakh tons	Quantity	Value	
				lakh tons	Rs crore	%
1	Cumin	8.08	5.03	1.29	2152	72.06
2	Fennel	0.76	1.29	0.37	324	10.86
3	Coriander	5.82	5.85	0.32	316	10.58
4	Fenugreek	2.28	2.48	0.35	194	6.50
	Total	**16.94**	**14.65**	**2.33**	**2987**	**100.00**

Source: www.nhb.gov.in and www.commerce.nic.in

Growth and future prospects

Trends in production and export of major seed spices during the last decade have been discussed crop wise in subsequent chapters of this book. These trends provide an indication that India has tremendous scope for increasing production as well as export of seed spices. However, quality standards required by importing countries are becoming more and more challenging. Hence, to enhance export of seed spices, there is a need to improve the quality of our seed spices through adoption of good agricultural practices (GAP) and better post harvest management.

Chapter 2

Production and Export of Cumin

Cumin commonly known as *jeera* belongs to the family Apiaceae. Cumin seeds have an aromatic odour and bitter taste. It is used as a condiment, ingredient in curry powders, seasonings of breads, cakes and cheese. In medicine, it is used as a stimulant, carminative, stomachic and astringent. Cumin seed oil is used in perfumery and for flavouring liqueurs and cordials.

Cumin is a low volume high value crop mainly grown in India, Syria, Iran and Turkey. India is the largest producer of cumin in the world contributing about 70% in global cumin production. Cumin is usually cultivated during *rab*i season in India. This crop is highly sensitive to rain. High humidity during flowering and seed forming stage causes fungal diseases in this crop.

Area, Production and Yield

The growth and instability in area, production and yield of cumin in India during the year 2006-07 to 2015-16 is presented in Table 2. The production of cumin has increased at a compound annual growth rate (CAGR) of 16.45% from 1.77 lakh tons in 2006-07 to an estimated 5.03 lakh tons in 2015-16. This significant growth was due to rise both in area (10.33%) and yield (5.55%) during the same period.

Table 2. Growth and instability in area, production and yield of cumin in India

Sr. No.	Year	Area (lakh ha)	Production (lakh tons)	Yield (kg/ha)
1	2006-07	4.09	1.77	432
2	2007-08	4.29	1.72	402
3	2008-09	4.29	1.72	402
4	2009-10	3.77	1.56	415
5	2010-11	5.08	3.14	619
6	2011-12	5.94	3.94	663
7	2012-13	5.94	3.94	663
8	2013-14	8.59	5.14	598
9	2014-15	8.90	4.86	546
10	2015-16	8.08	5.03	623
	CAGR (%)	**10.33****	**16.45****	**5.55***
	II	**13.14**	**17.70**	**13.64**

Source: Various reports of Spices Board of India and NHB

*Note: * indicates Significant at 5% level, ** indicates Significant at 1% level*

The area and production of cumin seeds in India was 8.08 lakh ha and 5.03 lakh tons, respectively. In India, cumin is mainly grown in Gujarat and Rajasthan due to favourable agro climatic conditions. The area, production and yield of cumin in these two states are given in Table 3.

Table 3. Major cumin producing states in India (2015-16)

Rank	State	Area		Production		Yield (kg/ha)
		lakh ha	%	lakh tons	%	
1	Gujarat	2.95	36.55	3.01	59.80	1019
2	Rajasthan	5.11	63.23	2.01	39.91	393
	Other	0.02	0.22	0.01	0.29	840
	Total	**8.08**	**100.00**	**5.03**	**100.00**	**623**

Source: Horticultural Statistics at a Glance 2017, GoI

It was observed that Gujarat was leading in production and Rajasthan in acreage. This was due to higher productivity in Gujarat (1019 kg/ha) as compared to Rajasthan (393 kg/ha). The low productivity of cumin in Rajasthan is due to frequent drought, lack of seeds of improved varieties and assured irrigation facilities, while high productivity in Gujarat may be due to the availability of irrigation water from various sources. The average productivity obtained in frontline demonstration and yield potential of GC-4 variety is 1250 kg/ha and 1875 kg/ha, respectively, which is much higher as compared to average yield (623 kg/ha) obtained in 2015-16. It indicates that there is a wide productivity gap between actual and potential/ realisable yield. There is a need to bridge productivity gaps.

The district wise area, production and yield of cumin in Gujarat and Rajasthan during the year 2015-16 is depicted in Table 4. In Gujarat, the Surendranagar district alone produced 91368 tons of cumin during the year 2015-16 which accounted for 30.36 per cent in total cumin production of the state followed by Patan (21.96%), Banaskantha (21.63%), Kutch (9.84%) and Morbi (6.50%) districts.

Similarly, in Rajasthan, Jodhpur district emerged as the largest producer of cumin with a production of 72107 tons during the year 2015-16 accounting for 35.90 per cent followed by Jalor (17.04%), Barmer (15.85%) and Nagour (15.49%) districts.

Variety

The improved varieties of cumin include Gujarat Cumin-1 (GC-1), GC-2, GC-3, GC-4, RS- 1, MC-43, RZ-19 and RZ-209. GC-4 variety has virtually solved two nagging problems of the farmers (i) cultivation of cumin cannot be done beyond couple of years on the same field due to accumulation of wilt pathogen. The variety GC-4 is completely resistant to wilt and, therefore, has absolved the farmers of this predicament. (ii) The splitting of seed that used to fetch less price in market has been corrected. GC-4 has a

Table 4. District wise area, production and yield of cumin in Gujarat and Rajasthan (2015-16)

Sr. No.	Name of districts	Area		Production		Yield (kg/ ha)
		ha	%	tons	%	
Gujarat State						
1	Surendranagar	84600	28.64	91368	30.36	1080
2	Patan	66100	22.38	66100	21.96	1000
3	Banaskantha	62000	20.99	65100	21.63	1050
4	Kutch	28200	9.55	29610	9.84	1050
5	Morbi	19000	6.43	19570	6.50	1030
	State Total	**295400**	100.00	**300938**	100.00	**1019**
Rajasthan State						
1	Jodhpur	147821	28.92	72107	35.90	488
2	Jalore	95738	18.73	34226	17.04	357
3	Barmer	132013	25.83	31840	15.85	241
4	Nagaur	49645	9.71	31107	15.49	627
5	Jaisalmer	38982	7.63	17817	8.87	457
6	Pali	20426	4.00	4370	2.18	214
	State (Total)	**511078**	100.00	**200848**	100.00	**393**

Source: Directorate of Horticulture, GoG, Gandhinagar and Commissionerate of Agriculture, GoR, Jaipur

value added ash coloured bold and no splitting seeds with pungent aroma and oil content (4.2%) that is bought at a premium. Over and above it is high yielding and significantly out-yielded the extant varieties GC-2 and GC-3 by 29.99 and 19.37 percent, respectively. (www.sdau.in)

Export

The export basket of Indian cumin during the year 2016-17 is presented in Table 5 which shows that cumin was mainly exported as a whole seeds comprising of black seeds and other than black seeds. A small quantity was also exported in powder form. It was found that other than black seeds category was dominating in the export market accounting for 86.28 per cent of total cumin export from India followed by black seeds (7.43%) and powder form (5.70%). Export market for value added products such as oil and oleoresins was found negligible.

Table 5. Export basket of Indian cumin (2016-17)

Sr. No.	Form of Cumin	Quantity		Value	
		tons	%	Rs lakh	%
1	Black Seeds	9693	7.52	15989	7.43
2	Other than black Seeds	112885	87.61	185704	86.28
3	Powder	6213	4.82	12267	5.70
4	Oil and Oleoresins	55	0.04	1283	0.60
	Total	**128846**	100.00	**215243**	100.00

Source: www.commerce.nic.in

Cumin is harvested in the month of February in India whereas in other major producing countries it is harvested in August–September. Due to this, Indian cumin seeds find a good market overseas till the new crop from other producing countries enters in the global market.

Growth and instability in export of cumin from India during the year 2007-08 to 2016-17 is presented in Table 6 and Figure 1. India exported 1.19 lakh tons of cumin worth of Rs 1963 crore during the year 2016-17. Looking to the trends, it reported significant growth in quantity (18.25%) as well as value (23.80%). Export price also showed positive and significant rise of 4.70% per annum during last decade.

Table 6. Growth and instability in export of cumin from India during the year 2007-08 to 2016-17

Sr. No.	Year	Quantity (tons)	Value (Rs lakh)	Price (Rs/kg)
1	2007-08	28000	29150	104.11
2	2008-09	52550	54400	103.52
3	2009-10	49750	54825	110.20
4	2010-11	32500	39598	121.84
5	2011-12	45500	64442	141.63
6	2012-13	85602	115307	134.70
7	2013-14	121500	160006	131.69
8	2014-15	155500	183820	118.21
9	2015-16	97790	153113	156.57
10	2016-17	119000	196320	164.97
	CAGR (%)	**18.25****	**23.80****	**4.70****
	II	**28.75**	**22.01**	**8.51**

Source: Various reports of Spices Board of India and NHB
*Note: ** indicates Significant at 1% level.*

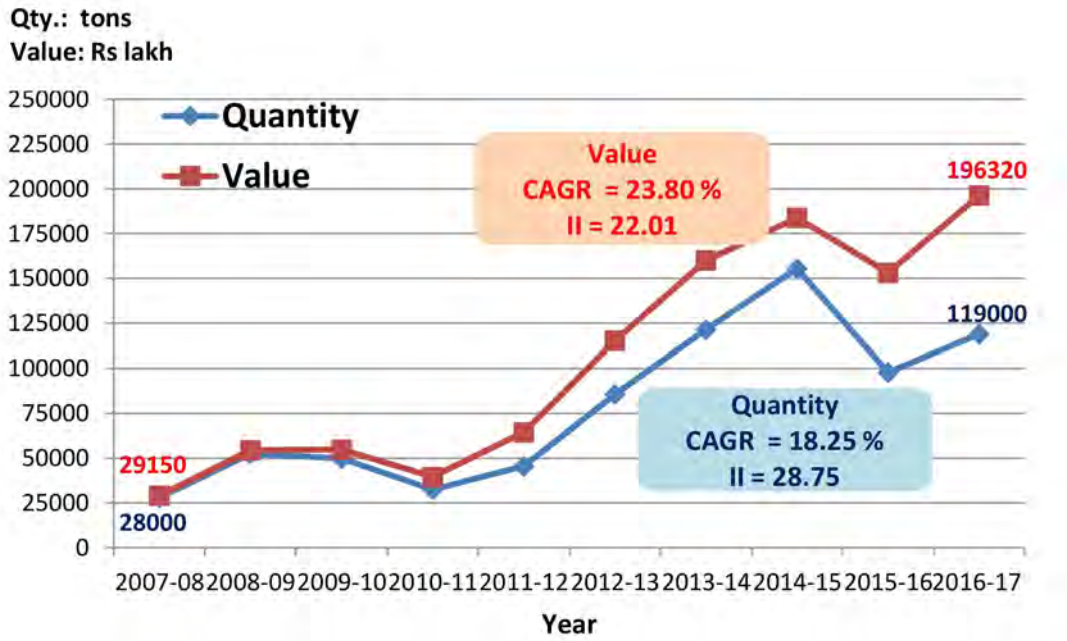


Figure 1. Growth in export of cumin from India

Despite India holding a giant share in the global cumin production, other major producers like Syria and Turkey play a significant role in determining the cumin prices in the global market, as both these countries export more than 90% of their domestic produce, unlike India. In India, there is huge domestic demand which is the main cause for high domestic price in the country.

Export Destinations

India exports cumin to about 127 countries around the globe. The major export destinations for Indian cumin seeds during the year 2016-17 are presented in Table 7. Vietnam emerged as the largest export destination with 32.07% share in total export followed by USA (8.43%), Bangladesh (7.86%) and UAE (6.60%).

Global Trade

According to International Trade Centre, there are about 60 countries which have exported cumin seeds to about 147 countries on the globe during the year 2016. The major exporting and importing countries with their share in trade is given in Table 8. It shows that India is the largest exporter of cumin seeds which accounted for 70.77% share followed by Syria (13.16%) and Turkey (5.15%). On import side, Vietnam emerged as largest importer with 25.04% share followed by Bangladesh (8.92%), USA (8.40%) and Egypt (5.19%). UAE was found fifth largest importer as well as fourth largest exporter of cumin seeds.

Table 7. Major export destinations for Indian cumin seeds (2016-17)

Rank	Country	Quantity (tons)	Value (Rs. lakh)	% to Total Value	Price (Rs/kg)
1	Vietnam	38332	64352	32.07	167.88
2	USA	8838	16919	8.43	191.44
3	Bangladesh	11067	15774	7.86	142.53
4	UAE	8486	13252	6.60	156.16
5	Malaysia	3953	6803	3.39	172.10
6	Spain	4310	6644	3.31	154.14
7	Brazil	4995	6048	3.01	121.10
8	Pakistan	3394	5953	2.97	175.39
9	Nepal	3763	5656	2.82	150.32
10	UK	2891	5629	2.81	194.66
	Other (116)	32549	53608	26.72	164.70
	India Total	**122578**	**200637**	**100.00**	**163.68**

Source: www.commerce.nic.in

Table 8. Major exporting and importing countries of cumin seeds (2016)

Export				Import			
Rank	**Country**	**Value ('000 USD)**	**%**	**Rank**	**Country**	**Value ('000 USD)**	**%**
1	**India**	**274807**	**70.77**	1	Vietnam	91810	25.04
2	Syria	51109	13.16	2	Bangladesh	32719	8.92
3	Turkey	20003	5.15	3	USA	30794	8.40
4	UAE	10860	2.80	4	Egypt	19016	5.19
5	Ethiopia	4635	1.19	5	UAE	15949	4.35
6	Iran	3026	0.78	6	Spain	11072	3.02
7	Lithuania	2834	0.73	7	Saudi Arab	10454	2.85
8	Czech	2436	0.63	8	Brazil	9909	2.70
9	Sri Lanka	2172	0.56	9	UK	9332	2.54
10	UK	2154	0.55	10	Sri Lanka	8452	2.30
	Other (50)	14268	3.67		Other (137)	127176	34.68
					(India)	**(6567)**	**(1.79)**
	World Total	**388304**	**100.00**		**World Total**	**366683**	**100.00**

Source: www.trademap.org

India's share in major export markets of cumin seeds during the year 2016 is presented in Table 9. The data revealed that India accounted for 99% of total cumin seeds imported by Vietnam which is the world's largest importer. In fact, India emerged as first choice for many other importing countries like USA, UAE, Spain, Brazil, UK, Sri Lanka,

Malaysia and Pakistan. This indicates that India's position in world's cumin seeds market is very strong and there is a great opportunity to expand it.

Table 9. India's share (%) in major export markets of cumin seeds (2016)

Rank	Major Export Markets	Major Exporting Countries with their Share (%)			
	World (100 %)	**India**	Syria	Turkey	UAE
		70.77	13.16	5.15	2.8
1	**Viet Nam** (23.64 %)	**India**	China	-	-
		99.00	1.00	-	-
2	**Bangladesh** (8.43 %)	UAE	**India**	Turkey	Singapore
		62.05	**18.55**	12.40	5.81
3	**USA** (7.93 %)	**India**	Turkey	Finland	Syria
		81.67	12.57	1.90	1.71
4	**Egypt** (4.90 %)	Syria	**India**	Turkey	China
		65.46	**33.41**	0.84	0.31
5	**UAE** (4.11 %)	**India**	Syria	Myanmar	Afghanistan
		71.03	28.62	0.09	0.08
6	**Spain** (2.85 %)	**India**	Syria	Turkey	Netherlands
		76.52	13.79	6.00	2.38
7	**Saudi Arabia** (2.69 %)	Syria	**India**	Egypt	Area Nes
		64.87	**27.81**	4.87	1.62
8	**Brazil** (2.55 %)	**India**	Turkey	Italy	-
		98.20	1.77	0.04	-
9	**UK** (2.40 %)	**India**	Turkey	Pakistan	France
		85.69	6.29	2.56	1.79
10	**Sri Lanka** (2.18 %)	**India**	Turkey	UAE	Syria
		75.52	19.16	2.95	2.37
11	**Malaysia** (1.76 %)	**India**	Turkey	Indonesia	Myanmar
		96.70	2.24	0.34	0.22
12	**Netherlands** (1.73 %)	Syria	Turkey	**India**	Germany
		40.69	31.60	**18.80**	4.40
13	**Pakistan** (1.72 %)	**India**	Afghanistan	Syria	Iran
		67.52	24.07	6.44	1.66
14	**India (1.69 %)**	Syria	Turkey	Area NES	Indonesia
		85.40	10.20	1.64	0.97

Note: Figureure in parenthesis indicates per cent to World Import.

Source: www.trademap.org

Chapter 3

Production and Export of Fennel

Fennel commonly known as *saunf* belongs to the family Apiaceae. It is used to improve eyesight, aid digestion and cure obesity besides other uses. In ayurveda, it is said to be vatanulomak (one which brings down the gas from intestine). In India it is custom to serve flavoured saunf to the human kinds after meals.

The leaves of fennel are used for garnishing. Leaves and stalks are used in salads. It is an essential ingredient in Italian sausages, widely used to sprinkle on pizza. Dried seeds have fragrant odour and pleasant aromatic taste and therefore used as a masticatory. It is also used for flavouring soups, meat dishes, sauces, pastries, confectionaries and liquors. The seeds are aromatic, stimulant and carminative.

Fennel is a native of Europe and Asia Minor. It is cultivated extensively in Gujarat and Rajasthan as a cold weather crop. It comes up well in fairly mild climate. The dry and cold weather favours high seed production. Prolonged cloudy weather at the time of flowering is conducive to diseases and pests.

Area, Production and Yield

The growth and instability in area, production and yield of fennel in India during the year 2006-07 to 2015-16 is presented in Table 10.

Table 10. Growth and instability in area, production and yield of fennel in India

Sr. No.	Year	Area ('000 ha)	Production ('000 tons)	Yield (kg/ha)
1	2006-07	50.3	60.8	1209
2	2007-08	54.3	67.8	1248
3	2008-09	47.2	64.3	1363
4	2009-10	50.7	56.6	1116
5	2010-11	61.8	105.4	1706
6	2011-12	100.0	143.0	1430
7	2012-13	100.0	143.0	1430
8	2013-14	54.2	70.1	1295
9	2014-15	39.0	60.0	1538
10	2015-16	76.0	129.0	1697
	CAGR (%)	**2.84 NS**	**5.84 NS**	**2.97 NS**
	II	**32.86**	**35.90**	**11.00**

Source: Various reports of Spices Board of India and NHB

Note: NS =Non-Significant.

It shows that India produced 1.29 lakh tons of fennel from 76.0 thousand ha area during the year 2015-16. Looking to the trends, the growth in area, production and yield of

fennel was found non-significant during this period. The high instability in area (32.86%) and production (35.90%) resulted in inconsistency which goes against the good prospects for fennel in India.

Like cumin, Gujarat and Rajasthan are two major fennel producing states in India. Table 11 shows area, production and productivity of cumin in India during the year 2015-16. It was observed that Gujarat State ranked first in area and production accounting for 59.74% and 74.81%, respectively. Gujarat reported higher productivity (2131 kg/ha) as compared to Rajasthan (1113 kg/ha).

Table 11. Major fennel producing states in India (2015-16)

Sr. No.	State	Area		Production		Yield (kg/ha)
		'000 ha	%	'000 tons	%	
1	Gujarat	45.4	59.74	96.8	74.81	2131
2	Rajasthan	27.6	36.30	30.7	23.75	1113
3	Other	3.01	3.96	1.5	1.44	502
	Total (India)	**76.00**	**100.00**	**129.0**	**100.00**	**1697**

Source: Horticultural Statistics at a Glance 2017, GoI

The district wise area, production and yield of fennel in Gujarat and Rajasthan during the year 2015-16 is depicted in Table 12.

Table 12. District wise area, production and yield of fennel in Gujarat and Rajasthan (2015-16)

Sr. No.	Name of districts	Area		Production		Yield (kg/ha)
		ha	%	tons	%	
Gujarat State						
1	Surendranagar	16600	36.56	36022	37.22	2170
2	Mehsana	6800	14.98	14756	15.25	2170
3	Morbi	6200	13.66	12090	12.49	1950
4	Banaskantha	4900	10.79	10535	10.89	2150
5	Patan	3600	7.93	8280	8.56	2300
6	Gandhinagar	2000	4.41	4340	4.48	2170
	State Total	**45400**	100.00	**96774**	100.00	**2132**
Rajasthan State						
1	Nagaur	15588	56.50	19169	62.41	1230
2	Jodhpur	4878	17.68	4390	14.29	900
3	Pali	2188	7.93	2812	9.15	1285
4	Tonk	1459	5.29	1459	4.75	1000
	State (Total)	**27587**	100.00	**30717**	100.00	**1113**

Source: Directorate of Horticulture, GoG, Gandhinagar and Commissionerate of Agriculture, GoR, Jaipur

In Gujarat, the Surendranagar district alone produced 36022 tons of fennel during the year 2015-16 accounting 37.22 per cent in total fennel production of the state followed by Mehsana (15.25%), Morbi (12.49%) and Banaskantha (10.89%) districts.

Similarly in Rajasthan, Nagaur district emerged as the largest producer of fennel with a production of 19169 tons of fennel during the year 2015-16 accounting for 62.41 per cent followed by Jodhpur (14.29%) and Pali (9.15%) districts.

Variety

The improved varieties of fennel include Gujarat Fennel-1 (GF-1), GF-2, GF-11, Ajmer Fennel-1 (AF-1), RF-101, RF-125, PF-35, S-7-9, Co-11 and Hisar Swarup.

Gujarat Fennel-11 is a bold seeded variety and is peculiar on three counts (i) the first variety recommended for *rabi* cultivation in the State, (ii) synchronous flowering habit and (iii) late heat tolerance. It possesses more number of seeds/umbellates, more number of umbellates/ umbel and more number of umbels/plant. On an average it gave 2489 kg/ha yield that is 12 per cent higher than the extant variety GF-2. Cultivation of Gujarat Fennel 12 (GF-12) will not only enhance the productivity but also improve profitability of fennel under varying environmental conditions. This variety has been recommended for release at national level during the biannual workshop of AICRP on spices held at Coimbatore (www.sdau.in).

Export

The export basket of Indian fennel is presented in Table 13. It was found that fennel was mainly exported in the form of whole seeds which accounted for 95.46% followed by powder form (4.20%). Export market for value added products such as oil and oleoresins were found very negligible.

Table 13. Export basket of Indian fennel (2016-17)

Sr. No.	Form of Fennel	Quantity		Value	
		tons	%	Rs lakh	%
1	Seeds	35845	96.74	30949	95.46
2	Powder	1198	3.23	1362	4.20
3	Oil and Oleoresins	8	0.02	112	0.34
	Total	**37051**	100.00	**32423**	**100.00**

Source: www.commerce.nic.in

Growth and instability in export of fennel from India during the year 2007-08 to 2016-17 is presented in Table 14 and Figure 2. India exported 35150 tons of fennel worth

of Rs 308.76 crore during the year 2016-17. It indicates significant growth in quantity (18.27%) as well as value (22.89%). Export price also showed positive and significant rise of 3.90% per annum during this period. These trends indicate that India has tremendous scope for export of fennel. Therefore, there is need to increase the area, production and productivity of fennel to meet ever increasing global demand.

Table 14. Growth and instability in export of fennel from India during the year 2007-08 to 2016-17

Sr. No.	Year	Quantity (tons)	Value (Rs lakh)	Price (Rs/kg)
1	2007-08	6110	4277	70.00
2	2008-09	6400	4811	75.17
3	2009-10	6800	5624	82.71
4	2010-11	7250	6588	90.87
5	2011-12	8100	7209	89.00
6	2012-13	13811	10466	75.78
7	2013-14	17300	16001	92.49
8	2014-15	11650	13166	113.01
9	2015-16	15320	17240	112.53
10	2016-17	35150	30876	87.84
	CAGR (%)	**18.27****	**22.89****	**3.90***
	II	**29.81**	**16.86**	**11.29**

Source: www.commerce.nic.in

*Note: * indicates Significant at 5% level, ** indicates Significant at 1% level, NS =Non-Significant.*

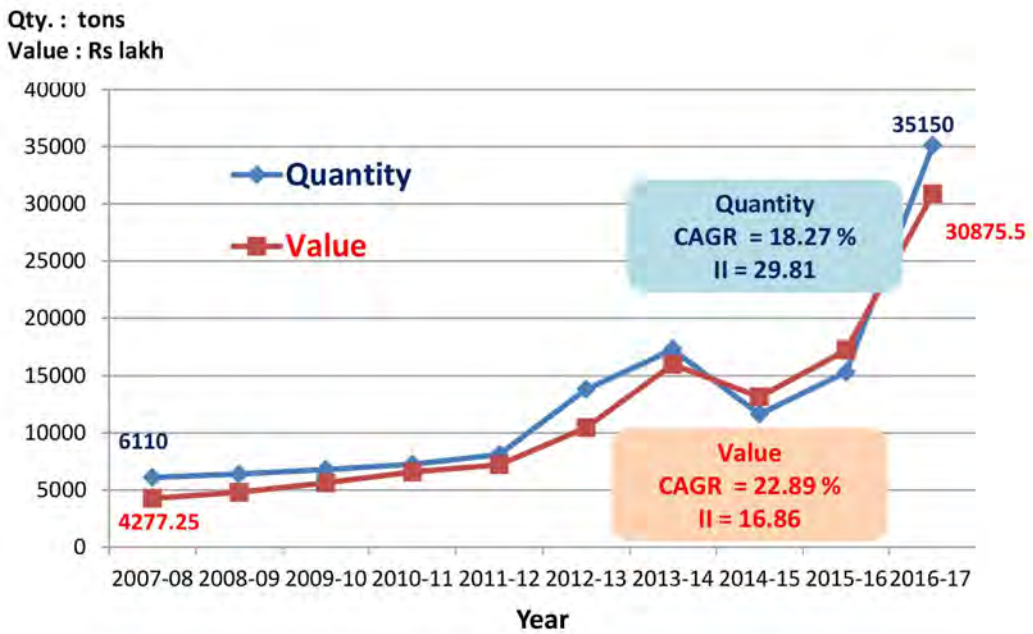


Figure 2. Export of fennel from India

Export Destinations

The major export destinations for Indian fennel seeds during the year 2016-17 are presented in Table 15. India exported fennel to about 88 countries around the globe. Vietnam ranked first with 50.29% share in total export from India followed by Malaysia (7.74), USA (7.63%) and Saudi Arab (6.10%).

Table 15. Major export destinations for Indian fennel seeds (2016-17) (other than seed quality)

Rank	Country	Quantity (tons)	Value (Rs. lakh)	% to Total Value	Price (Rs/kg)
1	Vietnam	18729	14547	50.29	77.67
2	Malaysia	2674	2240	7.74	83.77
3	USA	1997	2208	7.63	110.56
4	Saudi Arab	2012	1764	6.10	87.67
5	UAE	1205	1074	3.71	89.08
6	UK	586	790	2.73	134.80
7	Indonesia	887	540	1.87	60.86
8	Morocco	518	530	1.83	102.21
9	Canada	345	454	1.57	131.83
10	Brazil	540	421	1.46	77.95
	Other (78)	4580	4361	15.07	95.21
	Total	**34073**	**28928**	**100.00**	**84.90**

Source: www.commerce.nic.in

Global Trade

According to International Trade Centre, there are about 88 countries have exported fennel seeds to about 148 countries on the globe during the year 2016. The major exporting and importing countries with their share in trade is given in Table 16. It shows that India is the largest exporter and importer of fennel seeds which accounted for 24.33% and 14.65% share, respectively. Vietnam emerged as second largest exporting country with a share of 13.35% followed by Syria (12.14%) and China. On Import side, Germany reported as second largest importer of fennel seeds with 13.16% share followed by USA

(11.00%). Like India, Vietnam is also found as prominent exporter as well as importer country of fennel.

Table 16. Major exporting and importing countries of fennel in the world (2016)

Export				Import			
Rank	**Country**	**Value ('000 USD)**	**%**	**Rank**	**Country**	**Value ('000 USD)**	**%**
1	India	42199	24.33	1	India	30572	14.65
2	Vietnam	23146	13.35	2	Germany	27467	13.16
3	Syria	21050	12.14	3	USA	22953	11.00
4	China	19647	11.33	4	Viet Nam	17545	8.41
5	Egypt	13368	7.71	5	Algeria	8630	4.14
6	Turkey	12035	6.94	6	UK	4667	2.24
7	Germany	7225	4.17	7	Netherlands	4492	2.15
8	Netherlands	4876	2.81	8	Turkey	4248	2.04
9	Spain	3689	2.13	9	Brazil	4147	1.99
10	Canada	2308	1.33	10	Morocco	3471	1.66
	Other(78)	23866	13.76		Other (138)	80460	38.56
	World Total	**173409**	**100.00**		**World Total**	**208652**	**100.00**

Source: www.trademap.org

India's share in major export markets of fennel seeds during the year 2016 is presented in Table 17.

It shows that India's share in world's total import was 14.65% for which India looked to Vietnam as major supplier (40.69%). The subsequent quantity was imported from USA, Malaysia, Saudi Arab and UAE. Further, it was observed that India emerged as first choice for some of the major importing countries like USA and UK, whereas second choice for Morrocco and third choice for Vietnam, Algeria and Brazil. India has not found prominent place as exporter to some of the major importing countries like Germany, Netherlands and Turkey.

Table 17. India's share (%) in major export markets of fennel in the world (2016)

Rank	Major Export Market	Major Exporting Countries with their Share (%)				
	World (100%)	**India**	Vietnam	Syria	China	Egypt
		24.33	13.35	12.14	11.33	7.71
1	**India (14.65 %)**	Viet Nam	USA	Malaysia	Saudi Arabia	UAE
		40.69	9.91	8.88	5.16	4.42
2	Germany (13.16 %)	Egypt	China	Turkey	Finland	Netherlands
		18.55	15.29	10.58	7.53	6.00
3	USA (11.00 %)	**India**	Egypt	Finland	Turkey	Canada
		20.83	17.79	16.61	14.13	9.30
4	Viet Nam (8.41 %)	China	Malaysia	**India**	Area Nes	China
		50.42	28.26	**16.70**	4.62	50.42
5	Algeria (4.14 %)	Egypt	Syria	**India**	Lebanon	Viet Nam
		63.62	27.83	**5.30**	2.61	0.35
6	UK (2.24 %)	**India**	China	France	Germany	Turkey
		34.41	10.13	9.60	7.95	5.85
7	Netherlands (2.15 %)	Turkey	Egypt	Viet Nam	Spain	Syria
		29.76	17.72	9.46	8.46	7.70
8	Turkey (2.04 %)	Syria	Egypt	Serbia	Macedonia	Viet Nam
		91.67	5.11	1.69	1.37	0.14
9	Brazil (1.99 %)	Turkey	Syria	**India**	China	Egypt
		29.68	23.73	**20.30**	13.38	9.33
10	Morocco (1.66 %)	Egypt	**India**	Syria	China	Viet Nam
		41.86	**33.79**	17.80	4.64	1.24

Note: Figureure in parenthesis indicates per cent to World Import.
Source: www.trademap.org

Chapter 4

Production and Export of Coriander

Coriander commonly known as '*dhaniya*' belongs to the Umbelliferae or carrot family. All parts of this herb are edible. Fresh leaves of coriander are used for flavouring and garnishing salads, soups and curries. The seeds are widely used as condiments with or without roasting in the preparation of curry powders, sausages and seasonings.

Coriander is an important ingredient in the manufacture of food flavourings in bakery products, meat products, soda and syrups, gelatine and puddings, candy preserves and liquors. Coriander Powder is used as a flavouring agent in a number of pharmaceutical preparations, especially the digestive medicines. In medicines, it is used as a carminative, refrigerant, diuretic and aphrodisiac. In household medicines, it is used in case of seasonal fever, stomach disorders, and nausea. Coriander oil and oleoresins are primarily used in seasonings for sausages and other meat products.

Coriander is a native of Mediterranean and commercially produced in India, Morocco, Russia, East European countries, France, Central America, Mexico, and USA. It is a tropical crop and can be successfully cultivated as a *rabi* season crop in an area free from severe frost during February when the crop flowers and sets its seeds.

Area, Production and Yield

India is the world's largest producer and consumer of coriander. India contributes around 50-60% in the total world production. The growth and instability in area, production and yield of coriander in India during the year 2006-07 to 2015-16 is presented in Table 18. India produced about 5.85 lakh tons of coriander seeds from 5.82 lakh ha area with a yield of 1005 kg/ha during the year 2015-16. The production of coriander reported 9.45% compound annual growth rate (CAGR) during the year 2006-07 to 2015-16. This significant growth was due to 5.42% rise in area during the same period.

In India, coriander is cultivated in many states, though it is mainly concentrated in North-Western and Central parts of the country. Table 19 shows area, production and yield of coriander in India during the year 2015-16. Rajasthan ranked first in acreage and production contributing about 34.05 % and 39.65 %, respectively. Gujarat emerged as second largest producer of coriander seeds in India with 24.22 % share followed by Madhya Pradesh (18.93 %). Gujarat recorded the highest productivity 1567 kg/ha followed by Rajasthan (1068 kg/ha) and Madhya Pradesh (1009 kg/ha).

Table 18. Growth and instability in area, production and yield of coriander seeds in India during the year 2006-07 to 2015-16

Sr. No.	Year	Area (lakh ha)	Production (lakh tons)	Yield (kg/ha)
1	2006-07	3.62	2.88	795
2	2007-08	3.84	2.30	599
3	2008-09	3.97	2.42	610
4	2009-10	3.60	2.37	658
5	2010-11	5.31	4.82	909
6	2011-12	5.58	5.33	955
7	2012-13	5.43	5.24	965
8	2013-14	4.47	3.14	701
9	2014-15	5.53	4.62	835
10	2015-16	5.82	5.85	1005
	CAGR (%)	**5.42****	**9.55***	**3.92 NS**
	II	**11.10**	**24.52**	**15.44**

Source: Various reports of Spices Board of India and NHB

*Note: * indicates Significant at 5% level, ** indicates Significant at 1% level, NS =Non-Significant.*

Table 19. Major coriander producing states in India (2015-16)

Sr. No.	State	Area		Production		Yield (kg/ha)
		lakh ha	%	lakh tons	%	
1	Rajasthan	2.13	34.05	2.27	39.65	1068
2	Gujarat	0.89	14.18	1.39	24.22	1567
3	Madhya Pradesh	2.04	32.64	1.08	18.93	532
4	Assam	0.29	4.71	0.30	5.18	1009
	Total (India)	**5.82**	100.00	**5.85**	100.00	**1005**

Source: Horticultural Statistics at a Glance 2017, GoI

The district wise area, production and yield of coriander in Gujarat and Rajasthan during the year 2015-16 are presented in Table 20.

Table 20. District wise area, production and yield of coriander in Gujarat and Rajasthan (2015-16)

Sr. No.	Name of districts	Area		Production		Yield (kg/ha)
		ha	%	tons	%	
Gujarat State						
1	Junagadh	42800	48.31	62425	44.97	1459
2	Gir Somnath	13800	15.58	19734	14.22	1430
3	Kutch	6700	7.56	14941	10.76	2230
4	Morbi	6500	7.34	10400	7.49	1600
5	Patan	5900	6.66	9935	7.16	1684
6	Surendranagar	5900	6.66	9440	6.80	1600
	State Total	**88600**	100.00	**138800**	100.00	**1567**
Rajasthan State						
1	Jhalawar	98356	46.24	89650	39.46	911
2	Baran	44953	21.13	63645	28.01	1416
3	Kota	54890	25.80	58231	25.63	1061
	State (Total)	**212725**	100.00	**227203**	100.00	**1068**

Source: Directorate of Horticulture, GoG, Gandhinagar and Commissionerate of Agriculture, GoR, Jaipur

In Rajasthan, Jhalawar district emerged as the largest producer of coriander with a production of 89650 tons during the year 2015-16 accounting for 39.46 per cent followed by Baran (28.01%) and Kota (25.63%) districts. Whereas in Gujarat, Junagadh district alone produced 62425 tons of coriander during the year 2015-16 with 44.97% share in total production of the state followed by Gir Somnath (14.22%) and Kutch (10.76%) districts.

Variety

Improved varieties of coriander include Gujarat Coriander-1, Gujarat Coriander-2, Ajmer Coriander-1 (AF-1), Pusa Selection -360, CO-1, CO-2, CO-3, RCr-41, RCr-20, RCr-435, RCr-436, RCr-440, RCr-446, Sindhu, Rajendra Swati, Sadhana, Pant Haritima, Hisar Surbhi and Hisar Sugandh.

Export

The export basket of Indian coriander is presented in Table 21. It was found that coriander was mainly exported in the form of whole seeds which accounted for 64.14%. The powder form was also found popular in export market which accounted for 32.27% share. Export market for value added products such as oil and oleoresins were found very nominal.

Table 21. Export basket of Indian coriander (2016-17)

Sr. No.	Form of Coriander	Quantity		Value	
		tons	%	Rs. lakh	%
1	Seeds	23071	72.25	20266	64.14
2	Powder	8797	27.55	10195	32.27
3	Oil and Oleoresins	63	0.20	1136	3.59
	Total	**31931**	100.00	**31596**	**100.00**

Source: www.commerce.nic.in

Growth and instability in export of coriander (seeds and powder) from India during the year 2007-08 to 2016-17 is presented in Table 22 and Figure 3. India exported 30300 tons of coriander worth of Rs 292 crore during the year 2016-17. The trend indicated significant growth in terms of value (13.24%) but could not rise significantly on quantity base. The rise in value terms was due to significant rise in export prices (10.63%).

Table 22. Growth and instability in export of coriander (seeds and powder) from India during the year 2007-08 to 2016-17

Sr. No.	Year	Quantity (tons)	Value (Rs lakh)	Price (Rs/kg)
1	2007-08	26000	11025	42.40
2	2008-09	30200	20379	67.48
3	2009-10	47250	22586	47.80
4	2010-11	40500	16663	41.14
5	2011-12	28100	16402	58.37
6	2012-13	35902	20183	56.22
7	2013-14	45750	37186	81.28
8	2014-15	46000	49813	108.29
9	2015-16	40100	42681	106.44
10	2016-17	30300	29208	96.39
	CAGR (%)	**2.35 NS**	**13.24****	**10.63***
	II	**20.52**	**29.24**	**20.49**

Source: Spices Board of India

*Note: * indicates Significant at 5% level, ** indicates Significant at 1% level, NS =Non-Significant.*

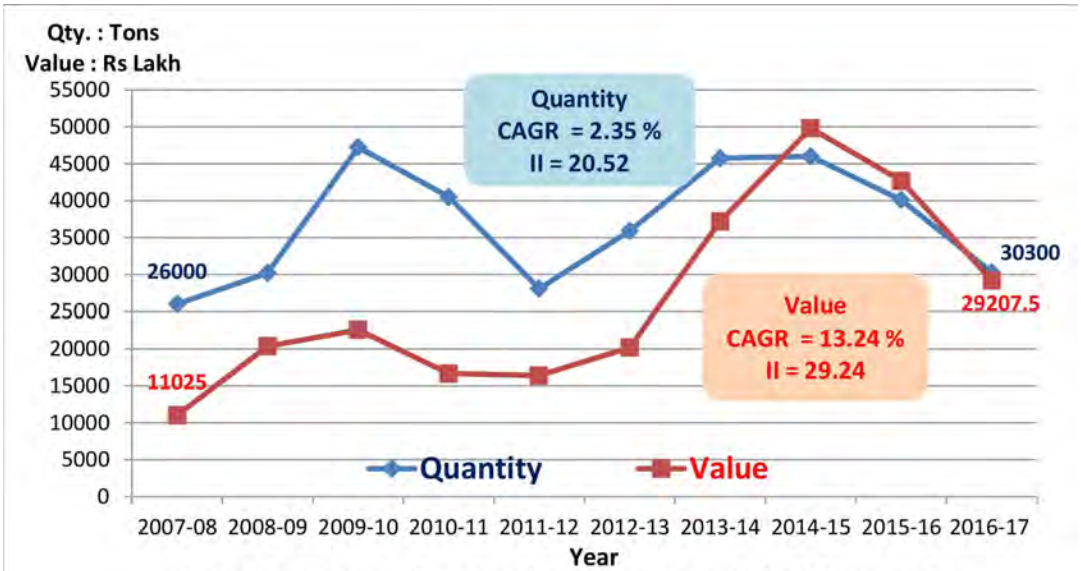


Figure 3. Export of coriander (seeds + powder) from India

Export Destinations

India exports coriander seeds to about 93 countries around the globe. The major export destinations for Indian coriander seeds during the year 2016-17 are presented in Table 23. Malaysia is the largest export market and accounted for 51.10% share in total export from India followed by UAE (8.27%), Bangladesh (5.66%) and UK (5.55%).

Table 23. Major export destinations for Indian coriander seeds (2016-17)

Rank	Country	Quantity (tons)	Value (Rs lakhs)	% to Total Value	Price (Rs/kg)
1	Malaysia	11931	10357	51.10	86.81
2	UAE	2338	1676	8.27	71.68
3	Saudi Arab	1656	1147	5.66	69.28
4	UK	1094	1124	5.55	102.73
5	USA	596	937	4.62	157.26
6	Oman	860	797	3.93	92.66
7	Nepal	886	699	3.45	78.85
8	Singapore	614	506	2.50	82.51
9	Kuwait	297	291	1.44	97.84
10	Qatar	378	284	1.40	75.12
	Others (83 countries)	2421	2393	12.08	101.11
	Total /Overall	**23071**	**20266**	**100.00**	**87.84**

Source: www.commerce.nic.in

The major export destinations for Indian coriander powder during the year 2016-17 are presented in Table 24. India exports coriander powder to about 76 countries around the globe. South Africa emerged as the largest export market and accounted for 20.42% share in total export of coriander powder from India followed by UK (15.24%), UAE (13.64%) and USA (11.22%).

Table 24. Major export destinations for Indian coriander powder (2016-17)

Rank	Country	Quantity (tons)	Value (Rs lakh)	% to Total Value	Price (Rs/kg)
1	South Africa	2135	2082	20.42	97.54
2	UK	1461	1554	15.24	106.39
3	UAE	1444	1390	13.64	96.27
4	USA	710	1144	11.22	161.07
5	Saudi Arab	434	600	5.88	138.18
6	Australia	427	597	5.85	139.87
7	Kuwait	241	332	3.25	137.46
8	Qatar	312	320	3.14	102.51
9	France	127	237	2.32	187.11
10	Malaysia	168	231	2.26	137.56
	Others (66)	1339	1709	16.77	127.64
	Total /Overall	**8797**	**10195**	**100.00**	**115.89**

Source: www.commerce.nic.in

Global Trade

Coriander seeds

The major exporting and importing countries of coriander seeds with their share in trade during the year 2016 is given in Table 25.

It was found that about 78 countries have exported coriander seeds to about 139 countries on the globe. India stood first on export as well as import front with 19.31% and 22.31% share, respectively. It is worth to notice that India's import (40078 thousand USD) was larger than its export (31966 thousand USD). On export front, Russia emerged as the second largest country with a share of 16.25% followed by Syria (14.25%) and Italy (12.02%). While on Import front, Malaysia hold the second rank with 12.53% share followed by Indonesia (6.62%) and Sri Lanka (5.57%).

Table 25. Major exporting and importing countries of coriander seeds (2016)

Export				Import			
Rank	**Country**	**Value ('000 USD)**	**%**	**Rank**	**Country**	**Value ('000 USD)**	**%**
1	India	31966	19.31	1	India	40078	22.31
2	Russia	26903	16.25	2	Malaysia	22520	12.53
3	Syria	23585	14.25	3	Indonesia	11897	6.62
4	Italy	19904	12.02	4	Sri Lanka	10004	5.57
5	Ukraine	11874	7.17	5	Egypt	7587	4.22
6	Bulgaria	10873	6.57	6	Algeria	7175	3.99
7	Morocco	7715	4.66	7	Saudi Arabia	6188	3.44
8	Argentina	6619	4.00	8	USA	5857	3.26
9	Canada	4217	2.55	9	UK	5831	3.25
10	Iran	2075	1.25	10	Japan	5306	2.95
	Others (68)	19825	11.97		Other (129)	57237	31.85
	World Total	**165556**	**100.00**		**World Total**	**179680**	**100.00**

Source: www.trademap.org

India's share in major export markets of coriander seeds during the year 2016 was worked out and presented in Table 26. The results revealed that India emerged as largest exporter as well as importer of coriander seeds with 19.31% and 22.31% share in the world market, respectively. Russia emerged as the largest supplier for India with 59.57% share followed by Italy (20.79%) and Ukrain (10.47%). In fact, India emerged as first choice for Malaysia and UK, whereas for Saudi Arabia and USA, India was their second choice.

Coriander powder

The major exporting and importing countries of coriander powder with their share in trade during the year 2016 is given in Table 27. It shows that about 67 countries have exported coriander powder to about 128 countries on the globe. India stood first on export with 45.02% share followed by Canada (6.02) and Russia (5.65%). On import side, South Africa stood first with 10.70% share followed by UK (10.62%), Malaysia (9.77%), USA

(9.59%) and UAE (8.06%). The UAE was fifth largest exporter as well as importer. Its Import was higher than export which allow us to assume that this may be a case of re-exporting which is quite common in international trade.

Table 26. India's share (%) in major export markets of coriander seeds in the world (2016)

Rank	Major Export Market	Major Exporting Countries and their Share (%)				
	World (100%)	**India**	Russia	Syria	Italy	Ukraine
		19.31	16.25	14.25	12.02	7.17
1	**India 22.31**	Russia	Italy	Ukraine	Bulgaria	USA
		59.57	20.79	10.47	3.85	2.09
2	Malaysia 12.53	**India**	Bulgaria	Russia	Ukraine	Myanmar
		93.20	2.22	1.34	1.07	0.91
3	Indonesia 6.62	Bulgaria	Russia	Argentina	Ukraine	Malaysia
		40.02	30.68	15.93	8.70	2.28
4	Sri Lanka 5.57	Russia	Ukraine	Bulgaria	Canada	Romania
		44.66	24.60	15.32	13.85	0.84
5	Egypt 4.22	Syria	Argentina	Turkey	Ukraine	Russia
		95.27	1.95	1.50	1.07	0.21
6	Algeria 3.99	Syria	Egypt	Lebanon	Russia	Ukraine
		90.66	2.73	1.76	1.23	1.11
7	Saudi Arabia 3.44	Syria	**India**	Egypt	Area Nes	Italy
		73.74	**18.65**	6.27	0.84	0.50
8	USA 3.26	Canada	**India**	Bulgaria	Ukraine	Egypt
		50.76	**25.15**	7.85	4.97	3.59
9	UK 3.25	**India**	Spain	Canada	Netherlands	Argentina
		48.62	19.95	4.92	4.51	3.55
10	Japan 2.95	Morocco	Canada	Bulgaria	**India**	Taipei
		92.78	5.24	0.96	**0.79**	0.11

Note: Figureure in parenthesis indicates per cent to World Import.

Source: www.trademap.org

Table 27. Major exporting and importing countries of coriander powder (2016)

Value in '000 USD

Export				Import			
Rank	**Country**	**Value**	**%**	**Rank**	**Country**	**Value**	**%**
1	India	14962	45.02	1	South Africa	3563	10.70
2	Canada	2001	6.02	2	UK	3537	10.62
3	Russia	1877	5.65	3	Malaysia	3254	9.77
4	Germany	1445	4.35	4	USA	3192	9.59
5	UAE	1425	4.29	5	UAE	2683	8.06
6	Netherlands	1137	3.42	6	Saudi Arabia	1762	5.29
7	Syria	1136	3.42	7	Germany	1509	4.53
8	UK	1077	3.24	8	Australia	1127	3.38
9	Poland	1037	3.12	9	France	1086	3.26
10	France	882	2.65	10	Kuwait	769	2.31
	Others (57)	6256	18.82		Others (118)	10817	32.48
	World Total	**33235**	**100.00**		**World Total**	**33299**	**100.00**

Source: www.trademap.org

India's share in major export markets of coriander powder during the year 2016 is presented in Table 28. It shows that India is the largest exporter of coriander powder with a share of 45.02% in the world. It also emerged as the first choice for all top ten importing countries of the world.

Table 28. India's share (%) in major export markets of coriander powder (2016)

Rank	Major Export Market	Major Exporting Countries and their Share (%)				
	World (100 %)	**India**	Canada	Russia	Germany	UAE
		45.02	6.02	5.65	4.35	4.29
1	South Africa (10.70 %)	**India**	Ukraine	Bulgaria	Bangladesh	Iran
		97.90	0.79	0.59	0.25	0.17
2	UK (10.62 %)	**India**	France	Turkey	Netherlands	Romania
		52.76	16.94	8.45	6.42	3.62
3	Malaysia (9.77 %)	**India**	Ukraine	Bulgaria	Russia	Panama
		88.11	5.07	4.15	1.23	0.65
4	USA (9.59 %)	**India**	Canada	Turkey	Egypt	Bangladesh
		59.93	26.41	5.80	3.88	1.10
5	UAE (8.06 %)	**India**	Syria	Ukraine	Russia	Bahrain
		80.84	15.88	1.04	0.82	0.45
6	Saudi Arabia (5.29 %)	**India**	Pakistan	Syria	UAE	Area Nes
		44.72	20.26	19.30	9.53	6.19
7	Germany (4.53 %)	Ukraine	Russia	Poland	Romania	Netherlands
		19.75	18.29	15.11	11.86	10.80
8	Australia (3.38 %)	**India**	Malaysia	South Africa	Turkey	USA
		81.01	7.36	5.59	3.28	1.33
9	France (3.26 %)	**India**	Germany	Netherlands	Romania	Poland
		41.25	26.15	8.75	6.63	4.88
10	Kuwait (2.31 %)	**India**	UAE	Pakistan	Syria	Bangladesh
		43.17	35.37	10.01	7.28	3.64

Note: Figureure in parenthesis indicates per cent to World Import.
Source: www.trademap.org

Chapter 5

Production and Export of Fenugreek

Fenugreek commonly known as *methi* belongs to the family Fabaceae. It is used both as a food and food additive as well as in medicines. Fresh tender pods, leaves and shoots are eaten as curried vegetable. As a spice, it flavours food. Powder of dried leaves is also used for garnishing and flavouring variety of food. It is one of the principle constituent of curry powder. The seeds are used in many ayurvedic medicines. It is also used as a carminative, tonic, and aphrodisiac. Fenugreek oil is used in the manufacture of hair tonics.

Fenugreek is a native of South Eastern Europe and West Asia, now cultivated in India, Argentina, Egypt and Mediterranean countries (Southern France, Morocco and Lebanon). It is a cold season crop and is fairly tolerant to frost and very low temperature. It is best suited to tracts of moderate to low rainfall and is sown in all types of soil but perform better in loam and clayey loam with proper drainage. It can also be grown on black cotton soils.

Area, Production and Yield

The growth and instability in area, production and yield of fenugreek in India during the year 2006-07 to 2015-16 is presented in Table 29. The production of fenugreek has risen at a compound annual growth rate (CAGR) of 15.15% from 49.5 thousand tons in 2006-07 to an estimated 2.48 lakh tons in 2015-16. This significant growth was due to rise in area (13.67%).

Table 29. Growth and instability in area, production and yield of fenugreek in India during the year 2006-07 to 2015-16

Sr. No.	Year	Area ('000 ha)	Production ('000 tons)	Yield (kg/ha)
1	2006-07	50.2	49.5	986
2	2007-08	55.2	55.5	1005
3	2008-09	68.3	76.6	1121
4	2009-10	43.3	57.4	1328
5	2010-11	81.2	118.4	1458
6	2011-12	94.0	116.0	1234
7	2012-13	93.0	113.0	1215
8	2013-14	65.9	89.6	1359
9	2014-15	123.0	131.0	1065
10	2015-16	228.0	248.4	1089
	CAGR (%)	**13.67****	**15.15****	**1.31 NS**
	II	**33.52**	**26.69**	**12.60**

Source: Various reports of Spices Board of India and NHB

*Note: ** indicates Significant at 1% level, NS =Non-Significant.*

In India, fenugreek is grown extensively in Rajasthan, Gujarat, Haryana, Madhya Pradesh, Uttar Pradesh, Maharashtra and Punjab. Table 30 shows area, production and yield of fenugreek in India during the year 2015-16. Rajasthan emerged as the most prominent state for contributing 76.65% share in production followed by Gujarat (5.71%) and Haryana (3.09%).

Table 30. Major fenugreek producing states in India (2015-16)

Sr. No.	States	Area		Production		Yield (kg/ha)
		'000 ha	%	'000 tons	%	
1	Rajasthan	157.0	68.87	190.4	76.65	1212
2	Gujarat	7.0	3.09	14.2	5.71	2013
3	Haryana	4.8	2.10	8.7	3.50	1820
	Others	59.1	25.94	35.1	14.14	594
	Total (India)	**228.0**	**100.00**	**248.4**	**100.00**	**1089**

Source: Horticultural Statistics at a Glance 2017, GoI

The district wise area, production and yield of fenugreek in Gujarat and Rajasthan during the year 2015-16 are presented in Table 31.

Table 31. District wise area, production and yield of fenugreek in Gujarat and Rajasthan (2015-16)

Sr. No.	Name of districts	Area		Production		Yield (kg/ha)
		ha	%	tons	%	
Gujarat State						
1	Dahod	1106	15.71	2212	15.61	2000
2	Patan	900	12.78	1782	12.58	1980
3	Mehsana	637	9.05	1484	10.48	2330
4	Surendranagar	680	9.66	1326	9.36	1950
5	Banaskantha	558	7.92	1283	9.06	2299
6	Kutch	341	4.84	722	5.10	2117
7	Vadodara	424	6.02	721	5.09	1700
	State Total	**7042**	100.00	**14167**	100.00	**2012**
Rajasthan State						
1	Bikaner	37064	23.61	43783	23.00	1181
2	Jodhpur	22331	14.22	28108	14.77	1259
3	Churu	19925	12.69	25952	13.63	1302
4	Sikar	12116	7.72	14167	7.44	1169
5	Jhunjhunu	11009	7.01	13611	7.15	1236
6	Nagaur	10659	6.79	10450	5.49	980
	State (Total)	**157004**	100.00	**190362**	100.00	**1212**

Source: Directorate of Horticulture, GoG, Gandhinagar and Commissionerate of Agriculture, GoR, Jaipur

** indicates the data used for the year 2014-15*

It shows that Dahod, Patan, Mehsana and Surendranagar are the leading districts in Gujarat State, whereas Bikaner, Jodhpur and Churu are the leading districts in Rajasthan.

Variety

The improved variety of fenugreek include Gujarat Methi-1 (GM-1), GM-2, Ajmer Fenugreek-1 (AF-1), AF-2, RMt-1, RMt-143, RMt-303, RMt-305, Rajendra Kranti, HM-103, Hisar Sonali, Hisar Suvarna, Hisar Mukta, Hisar Madhvi and Pusa Kasuri.

Gujarat Methi-2 is noble on account of better yield (1920 kg/ha) and tolerance to powdery mildew, root rot and downy mildew. It has bold, lustrous and uniform light yellow grains that are liked more by the traders and consumers. It has better medicinal properties (bitterness, foaming index, fixed oil content) and consequently fetches higher prices in the market (www.sdau.in)

Export

The export basket of Indian fenugreek is presented in Table 32. It was found that fenugreek was mainly exported in the form of seeds which accounted for 85.82% followed by powder form (9.85%). Export market for value added products such as oil and oleoresins were found very nominal.

Table 32. Export basket of Indian fenugreek (2016-17)

Sr. No.	Form of Fenugreek	Quantity		Value	
		tons	%	**Rs lakh**	%
1	Seeds	33208	94.05	16665	85.82
2	Powder	1971	5.58	1913	9.85
3	Oleoresins	129	0.37	841	4.33
	Total	**35308**	100.00	**19419**	**100.00**

Source: www.commerce.nic.in

Growth and instability in export of fenugreek from India during the year 2007-08 to 2016-17 is presented in Table 33 and Figure 4.

India exported 34680 tons of fenugreek worth of Rs 182.77 crore during the year 2016-17. The trend indicated significant growth in quantity (7.32%) as well as value (16.76%). Export price also showed positive and significant rise of 8.80% per annum during this period.

Table 33. Growth and instability in export of fenugreek from India during the year 2007-08 to 2016-17

Sr. No.	Year	Quantity (tons)	Value (Rs lakh)	Price (Rs/kg)
1	2007-08	17300	5026	29.05
2	2008-09	22818	7486	32.81
3	2009-10	21000	6972	33.20
4	2010-11	18500	6548	35.40
5	2011-12	21800	7275	33.37
6	2012-13	29622	10488	35.41
7	2013-14	35575	13378	37.61
8	2014-15	23100	13948	60.38
9	2015-16	33330	23381	70.15
10	2016-17	34680	18277	52.70
	CAGR (%)	**7.32****	**16.76****	**8.80****
	II	**15.80**	**18.26**	**17.27**

Source: Spices Board of India

*Note: ** indicates Significant at 1% level.*

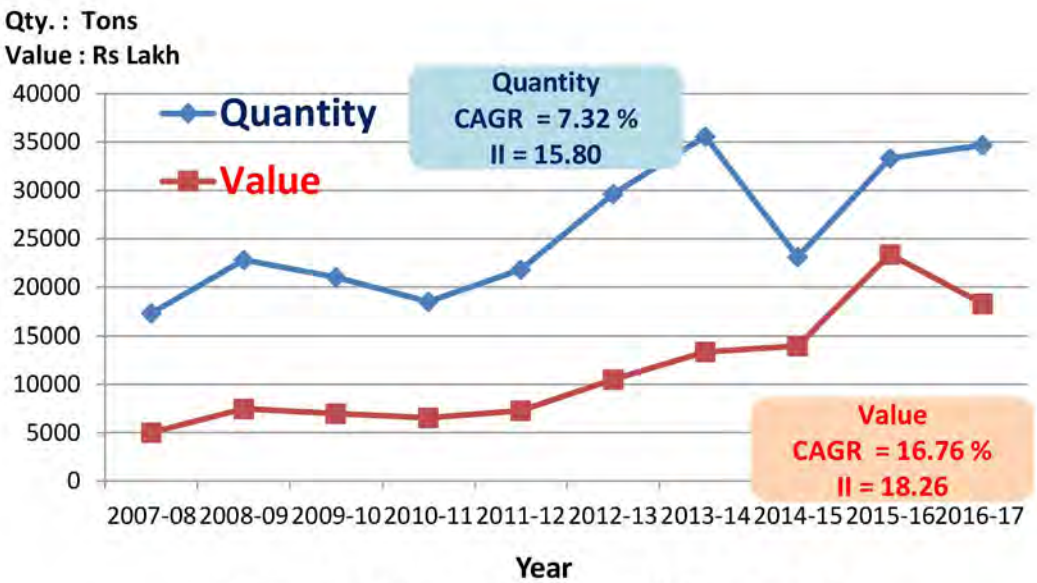


Figure 4. Export of fenugreek from India

Export Destinations

India exports fenugreek seeds to about 84 countries across the globe. The major export destinations for Indian fenugreek seeds during the year 2016-17 are presented in Table 34. UAE emerged as the largest export destination for Indian fenugreek with 8.06% share followed by Yemen (7.60%), USA (7.28%), Saudi Arab (6.84%) and Shri Lanka (6.43%).

Table 34. Major export destinations for Indian fenugreek seeds (2016-17)

Rank	Country	Quantity (tons)	Value (Rs lakh)	% to Total Value	Price (Rs/kg)
1	UAE	2771	1343	8.06	48.46
2	Yemen	2904	1267	7.60	43.62
3	USA	1239	1213	7.28	97.95
4	Saudi Arab	2654	1141	6.84	42.97
5	Sri Lanka	2505	1071	6.43	42.75
6	Sudan	2027	876	5.26	43.23
7	South Africa	1501	736	4.41	49.01
8	Morocco	1568	670	4.02	42.73
9	Bangladesh	1309	528	3.17	40.33
10	Japan	813	520	3.12	63.91
	Others (74)	13915	7300	43.81	52.46
	Total/Overall	**33208**	**16665**	**100.00**	**50.18**

Source: www.commerce.nic.in

Chapter 6

Quality Requirements in Export of Seed Spices

The spice supply chain is complex and product can pass through many hands before it finally reaches the consumer. Everyone along the supply chain shares in the responsibility to ensure that the consumer has access to clean and safe spice. Quality of seed spices is an important issue in international trade. Various importing countries have fixed their quality standards which need to be followed by the exporter. These standards vary from country to country. These are briefly discussed as under.

USA

USA is the most important buyer of our seed spices and their products. American spice trades Association (ASTA) is the authority which defines various quality parameters of spices import to USA. ASTA has developed guidance for the Industry on pathogens in spices. The guidance includes five key recommendations.

(1) Minimize the risk for introduction of filth throughout the supply chains

Spice manufacturers should adhere to the ASTA's cleanliness specifications and USFDA Defect Action Levels for extraneous matter and filth in spices. Action should be taken at each stage of the supply chain to minimize the potential for contamination of spices by mammalian excreta, rodent hair, insect fragments and other foreign materials. The cleanliness specifications of ASTA for major seed spices are presented in Table 35.

Table 35. ASTA cleanliness specifications for major seed spices

Name of Seed Spice	Whole insects, dead	Excreta, mamma-lian	Excreta, other	Mold	Insect defiled/ infested	Extraneous/ foreign matter
	By count	By mg/lb	By mg/lb	% By Weight	% By Weight	% By Weight
Coriander	4	3	10	1	1	0.5
Cumin seed	4	3	5	1	1	0.5
Fennel seed	SF(2)	SF(2)	SF(2)	1	1	0.5

Source: ASTA www. Astaspices.com

(2) Prevent environmental contamination, cross contamination and post process contamination during processing and storage

Although some spices have the inherent quality of antibacterial activity, many of them are harbouring microorganism including pathogens. Some pathogens are indigenous in the soil and some are come in contact with the spices during the growing, harvesting,

drying, blending, packaging, transport and storage and distribution. Dust, dirt, insects, and animal parts are also sources of contamination.

(3) Use validated microbial reduction technique

ASTA recommends using validated methods of bacterial reduction including Salmonella. The methods should be approved by USEPA (United States Environmental Protection Agency). Ethylene Oxide (ETO) and Ethylene Chlorhydrin are generally used methods with a maximum residue limit of 7 mg/kg and 940 mg/kg, respectively in seed spices. Irradiation and steam treatment are other methods. All methods should have validated to destroy the Salmonella. Microorganisms that may be found in spices are presented in Table 36**.**

Table 36. Micro organisms that may be found in spices

Micro organisms	**Minimum water activity for growth (Aw)**	**Micro organisms**	**Minimum water activity for growth (Aw)**
Bacteria		**Fungi, Yeast and Molds**	
Salmonella	0.93–0.94	*Aspergillus flavus/ parasiticus*	0.8
C.perfringens	0.97	*Botrytis cinerea*	0.97
C.botulinum	0.94	*Penicillium ssp.*	0.79–0.82
Bacillus cereus	0.93	*Saccharomyces cerevisiae*	0.9
E. coli	0.95	*Rhizopus stolonifer*	0.89
Listeria monocytogenes	0.92	*Zygosaccharomyces rouxii*	0.62
Halobacterium halobius	0.75	*Xeromyces bisporus*	0.61
Staphylococcus aureus	0.82		

Source: Spice Handbook - 2017

(4) Perform post treatment testing to verify a safe product

ASTA recommends post treatment test to verify the effectiveness of the treatment.

(5) Test to verify a clean and wholesome manufacturing environment

The quality of the products can be affected at various stages like growing, harvesting, drying, transport, processing, post processing storage etc. Hence ASTA recommends to monitor the environment for its cleanliness. Bacterial load is monitored by finding the Aerobic plate count, coliforms or Enterobactericea from the product contact areas. Frequent monitoring of Salmonella also is mandatory from contact surfaces of the spices.

The USFDA is the primary regulatory agency with authority to regulate the safety and cleanliness of spices including seed spices. The EPA regulates agricultural chemicals that may be applied to spices including fumigants, that may be used in microbial reduction strategies. USFDA enforces EPA's pesticide tolerances in food.

ASTA cleanliness specifications establish limits for macroscopic extraneous matter for domestic and imported spices and herbs coming to US. The cleanliness specification also includes microscopic filth limits. ASTA specifications are widely accepted and as per that extraneous matter is defined as everything foreign to the product itself and include stone, dirt, glass, string, stem, sticks, nontoxic foreign seeds, excreta, manure and animal contamination.

Action should be taken at each step of the supply chain to minimize the contamination of filth. Adherence to Good Agricultural Practices (GAP) and Hazard analysis Critical Control Point (HACCP) reduce the risk of food safety hazards in finished products by identifying the potential risk in the process.

The primary objective of implementation of HACCP is to eliminate the risk of contamination of spices by insects that pose a threat to human health. Each spice manufacturers should develop and implement HACCP in the manufacturing units.

European Union

Among the importers of Indian food products, stringent quality parameters are introduced by European Union. The European Spice Association is the umbrella organization of the European Spice Industry. The standards for quality of food in European countries both manufactured in EU or imported from other states are determined by European Food Safety Authority.

Like USA, in the case of spices EU also insists for Good Agricultural Practices to follow in the farming activities. But they have not defined any specification for filth and foreign matters in spices. In the case of spices very few items are covered under their quality purview and standards are fixed for parameters like Aflatoxins and some of the pesticide residues. Another quality concern is regarding the pesticide residues that may present in the spices. Contamination of spice crop from pesticides is of major concern. EU has formulated regulations for some of the pesticides that are listed below. Maximum Residue Limit (MRL) is fixed for these contaminants. The MRL is generally fixed for the pesticides for which specific tolerances are not fixed is, 0.01 mg/kg. MRL for other parameters like heavy metals and microbiology are not defined and made available for the compliance.

The name of pesticides and their tolerance levels as per EU as well as GSO standard for spices in microbiology are depicted in Table 37 and Table 38, respectively.

Table 37. Name of pesticides and their tolerance levels as per EU

S.No	Name of Pesticides	MRL (mg/kg)	S.No	Name of Pesticides	MRL (mg/kg)
1	Thiabentazone	0.10	16	Fentene	0.10
2	Ethofumesate	0.05	17	Flucycloxurone	0.05
3	2-4-5-T	0.05	18	Flucythrinate	0.05
4	Barban	0.05	19	formothione	0.05
5	Bromofosethyl	0.05	20	mecarbam	0.05
6	Toxofene	0.05	21	Methacriphose	0.05
7	Carbofuran	0.05	22	Monolinuron	0.05
8	Chloroxuron	0.05	23	Phenothrim	0.05
9	Chlozolinate	0.05	24	Propharm	0.05
10	Dialate	0.05	25	Pyrazophose	0.05
11	Dinozeb	0.05	26	Qunalphos	0.05
12	Dinoterb	0.05	27	Resethrin	0.05
13	Dioxathione	0.05	28	Teenazone	0.05
14	DNOC	0.05	29	guazatine	0.05
15	Ethylene oxide	0.05			

Source: Spice Handbook - 2017

Table 38. GSO standard for spices in microbiology

Microorganism	Limit per gram			
	n	c	m	M
Staphylococcus aureus	5	1	10^2	10^4
Salmonella	5	0	0	--
Yeast & mould	5	2	10^2	10^4
E.coli	5	2	10	10^2

Source: Spice Handbook - 2017

Other importing markets are the Middle East, Canada, South Africa, North American Countries Other than USA, Japan, Australia, Newzealand, and Malaysia. As per the available information the standards followed by European Union are adopted by Middle East. The exporters are required to update the regulatory requirements of the importing countries for their sustainability. It is high time to empathize our farmers about the importance of adopting Good Agricultural Practices (GAP). Country wise quality parameters mandatory for exporting certain seed spices and their products are shown in Table 39.

Table 39. Country-wise quality parameters mandatory for exporting certain seeds spices and their products

Name of The Country	Product	Parameter With Specification
Canada	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected
South Africa	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected
Other North American Countries	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected
Japan	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Cumin seeds & powdered cumin seeds	Iprobenfos < 0.01mg/Kg
		Profenofos< 0.05mg/Kg
		Triazofos< 0.01mg/Kg
		Ethion< 3.00mg/Kg
		Phorate< 0.50mg/Kg
		Parathion < 0.60mg/Kg
		Chlorpyrifos< 5.00mg/Kg
		Methylparathion< 5.00mg/Kg
	Sugar coated fennel	Sunset Yellow Not detected
	Fenugreek whole & ground	Iprobenfos < 0.01mg/Kg
		Profenofos< 0.05mg/Kg
		Triazofos< 0.01mg/Kg
		Ethion< 3.00mg/Kg
		Phorate< 0.50mg/Kg
		Parathion < 0.60mg/Kg
		Chlorpyrifos< 5.00mg/Kg
		Methylparathion< 5.00mg/Kg
Australia & Newzealand	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected
Malaysia	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected
Other Countries	Cumin seeds	Extraneous matter 3% Max
		Other seeds 0.25% Max
	Sugar coated fennel	Sunset Yellow Not detected

Source: Spice Handbook - 2017

Chapter 7

Major Constraints in Export

The Indian seed spice industry is facing many challenges in spite of continuous export growth. Major constraints in export of seed spices are as under.

1. High domestic price

The domestic demand of seed spices in our country is very high. About 75 to 80 % of production is consumed within the country. In many cases, domestic prices are found higher than the international prices. There is a need to bring down the cost of production by improving productivity.

2. Challenge of food safety and quality

The major importing countries are coming out with more stringent legislations on quality requirements. Indian standards are also revised. Farmers are not aware about the quality problems. They use chemicals as per the advice of local traders which creates issues of residuals. There is need to provide training to the farmers about use of appropriate cultural practices like GAP for exportable quality production.

3. Lack of infrastructure facility

The available infrastructure facilities such as, processing and laboratory for testing of quality is not adequate and appropriate. The Spices Board in association with local APMC and exporters is taking steps for strengthening supply chain and future growth in trade. Recently efforts have been made to establish a Spice Park at Unjha, which is Asia's largest cumin market and globally renowned seed spices trading hub. But it has still not been completed due to one or the other reasons.

4. Need for organic

The demand for organic seed spices is immerging and will increase in the future. At present sufficient quantity of organically produced seed spices is not available. Organic production in seed spices, particularly in cumin is very difficult due to high risk of disease. There is need to evolve specific varieties for organic production. Some areas where farmers are not using chemicals in farming are by default organic and such clusters should be identified and developed for large scale organic production. Contract farming with buyback arrangement with exporters should be encouraged.

5. GST

Recently GST is introduced in India with an objective of one nation one tax. It may help in long run but at present there is lot of difficulties faced by the exporters in regards to delay in refunds. The large amount of working capital of exporters has been blocked due to GST and it has created financial problems in taking new export orders.

Chapter 8

Good Agricultural Practices (GAP) in Export of Seed Spices

Like any other agricultural product, spices may be contaminated by pathogens, naturally occurring toxins such as mycotoxins, agrochemicals such as fertilizers and pesticides, heavy metals and accidental contaminants. Food safety is of considerable significance in this globalized era and the safety of spices depends on maintaining good agricultural and hygienic practices along the food chain during primary production, post-harvest, packing, processing, retail and at the point of consumption.

Reconditioning is carried out throughout the supply chain to remove both foreign and extraneous matter, to improve the microbiological status or to improve the quality. However, it is extremely difficult to recondition spices for contaminants such as heavy metals, mycotoxins and pesticide residues. In such a scenario, the only option is to prevent these potential contaminants from either getting into the product or being formed during post harvest handling.

Good Agricultural Practice (GAP) is a concept evolved by the Food and Agriculture Organization of the United Nations (FAO). GAP is production and farm level approaches to ensure the safety of fresh produce for human consumption. Good agricultural practices in broad sense deals with production of crops with sanitation with best management practices to get a crop which is safe, nutritious as well as promotes sustainability, is the need of hour, besides this farm produce should be packed in suitable packages and stored in proper godowns. So that quality of produce can be maintained for longer period.

An Indian seed spices have tremendous prospects of export, besides high domestic demand. The international standards of export for seed spices are becoming stringent over quality control and pesticide residue, that's why now a days, major emphasis is given to adoption of GAP including scientific organic farming for better quality and lesser residual effects of chemicals/pesticides, to meet out the international standards, as well to provide the nutritional security with the supply of safe quality food.

Importance of GAP

Good Agricultural Practices or GAP are "practices that need to be applied on farms to ensure food safety during pre-production, production, harvest and post-harvest. In many cases such practices also help to protect the environment and safety of workers." They are a set of principles to apply to farm production and post-production processes, taking into account economic, social and environmental sustainability.

Advantages of adopting GAP

- Produce safe, healthy, high quality food for consumers
- Development of basic infrastructure at the field level
- Build up the culture of following good agricultural practices by the farmers
- Uniform approach across farms regardless of their sizes
- Increased awareness among the farmers
- Traceability through complete integration of food chain *i.e.* from farm to fork, the produce must be traceable for its origin including all inputs
- Improvement in the environment as well as soil fertility
- Worker safety and welfare
- Reputation in the international market as a producer of good quality and safe produce
- Removal of Technical Barriers to Trade (TBTs) faced by exporters of agro products

GAP tips to get higher productivity

- Deep ploughing is to be done on bright sunny days during summer
- Do not plank or irrigate the field after ploughing
- The field should be kept exposed to sun light at least for 2 to 3 weeks
- Grow varieties suitable for the season or region
- Grow only recommended pest/ disease tolerant /resistant varieties
- Do not use seed without seed treatment with biocide chemicals
- Always treat the seeds with approved chemicals for the control of seed borne disease
- Don't grow crops in disease affected fields in subsequent years
- Practice crop rotation in severely infected fields
- Don't spray insecticides which are harmful to the honey bees
- Spray pesticides during the evening hours when honey bees activities are minimum because honey bees are major pollinators in coriander crop
- Don't grow some crop continuously for more than three years in the same field to avoid wilt disease
- Survey the field regularly to monitor pest/ disease appearance
- Don't use plant protection measures on calendar basis
- Use cement – concrete threshing yard or tarpaulin during processing of harvested material
- Clean and grade properly at farm level itself
- Curing & drying of harvested produce in the field is most important to maintain the

colour of coriander seeds.

- The quicker the drying time the better the final microbial quality of the product
- Bagging / packaging and storage of the produce at appropriate moisture level

GAP for integrated disease and insect pest management in seed spices is presented in Table 40.

Table 40. GAP for integrated disease and insect pest management in seed spices

Stage	Practice	Target pest/disease
Pre sowing	Deep summer ploughing, soil solarization	Soil born pathogen and nematodes
	Crop rotation	All pest and diseases
	Organic amendments: application of mustard/ castor/ neem cake/ combination of mustard residue, mustard cake and neem cake	Soil born pathogen and nematodes
	Avoid late sowing	Powdery mildew
At the time of sowing	Selection of tolerant/ resistant varieties	Wilt/ stem gall
	Seed treatment with fungicide carbandazim/ carbandazim+thiram @ 2g/kg seed or *Trigonella viride* @10g/kg and soil application of *T. viride* @2.5 kg/ha (mixed with FYM)	Wilt/ stem gall
Vegetative	Timely hoeing and weeding, soil application of *T. viride* before hoeing.	Wilt and stem gall
	Avoid excess use of irrigation and nitrogenous fertilizers, Rouging of diseased plants	Wilt and sucking pests and stem gall
Flowering	Stop irrigation under cloudy and high due condition	Blight
	Prophylectic spray of mancozeb/ chlorothalonil@0.2%	Blight and stem gall
	Foliar application of NSKE (5%)	Sucking pests
	Collection and killing of larvae of cutworm and leaf foliators	Cutworm
Post-flowering/ grain filling	Avoid irrigation at the time of active seed filling. Application of botanicals like NSKE 5%, neem oil 2% and karanj oil 2%.	Sucking pests
	Spray of propiconazole/ picoxystrobin/ azoxystrobin	Blight and stem gall
	Spray of insecticide (dimethoate/ imidacloprid/ acetamiprid/ thiomethoxam)	Sucking pests

Stage	Practice	Target pest/disease
	Conservation of parasitoids and predators like coccinalids, chrysopids and syrphid fly	Sucking pests
	Augmentative release of *Coccinella septempunctata* against aphids and sucking pests	Sucking pests
	Crop may be dusted with sulpher dust @ 25 Kg/ha or spraying with wettable sulpher @0.25% or dinocap @ 0.1% at the initiation of powdery mildew disease	Powdery mildew
	Timely harvesting to minimize powdery mildew attack	Powdery mildew
Post- harvest	Seed should be properly dried and stored in bags	Stored pests

GAP for the export of seed spices as suggested by The American Spice Trade Association (ASTA) is as under (ASTA, 2016):

MYCOTOXINS

Contaminants caused by mold formation can impact the safety of spices as some molds produce toxins that can be harmful to human health. Collectively these are known as mycotoxins. For spices, the two mycotoxins of concern are ochratoxin A (OTA) and aflatoxins as they are potentially carcinogenic. Aflatoxins are produced by molds/fungi of the genus *Aspergillus* and ochratoxin A is produced by both *Aspergillus* and *Penicillum*. At present the toxin cannot be removed by further processing nor inhibited by heat treatment. These molds will typically grow on foods that have been subjected to high temperatures and elevated humidity levels, although OTA can be formed at lower temperatures. Similarly, it has been shown that while the initial contamination normally occurs during farm and drying activities, the actual mycotoxin formation may happen throughout the entire supply chain, including transportation, storage and production.

Preventative measures taken by all stakeholders in the supply chain from field to fork are the best way to prevent mold formation and thus enhance spice safety.

Growing

In general terms spices will have few mycotoxins problems if the spice is healthy and undamaged. Nevertheless, contact with any obvious sources of fungal contamination (soil, poor quality water and moldy spices) should be minimized to help the spices natural defenses.

Harvesting

The soil under the plant should be covered with a clean sheet of plastic during picking to avoid fruits getting contaminated by dirt or mixed up with moldy fruits that have fallen prior to harvesting. Fallen fruit and leaves should be removed from the area as they provide growing conditions suitable for molds. Alternatively, the raw spice that has fallen to the ground should be collected separately, washed, cleaned, dried and evaluated prior to possible inclusion with the main lot.

Process fresh spices as quickly as possible. Avoid storage of fruits, especially ripe and over-ripe ones, as any period of storage (in a bag or in a pile) increases the likelihood of mold growth. When possible, start drying on the day of harvesting. Wherever possible, a system for differential harvesting should be applied, so that once products are ripe they are harvested. This ensures good quality and helps prevent mold growth and mycotoxins generating from overripe fruits. This also helps by not overloading the drying operation, and thus fruits can be dried correctly with minimal storage.

Sun Drying

Do not dry on bare soil. Use trays, tarpaulins, bamboo mats or drying yards and make sure that these are clean prior to use, as it is known that mold spores from previous use or from the atmosphere could re-contaminate product during drying. The layer of drying fruits or leaves should not be more than 4 cm thick, otherwise the material in the center of the layer gets too warm and wet and has little ventilation. This can create ideal growing conditions for molds. Drying seeds or leaves must be raked regularly (5-10 times per day). Protect seeds during drying from rain and night dew and make sure that seeds does not get wet again during storage periods. Drying areas should be raised from the ground to prevent pest ingress and the potential effect this could have on mycotoxins generation and other issues. The drying area should be constructed of a material that will not contaminate the spices in question and is easy to clean. Pathways should be made in the drying area to prevent anyone from walking on the crop, as this can damage the seeds and allows mold growth to occur.

Controlled drying

To give better quality, reduced bacterial loads and ensure less risk of mycotoxin growth, a system of controlled drying can be employed. Solar drying is one method, where crops are protected in polythene tunnels and the temperature is controlled through the use of air movement. Such tunnels should be designed so that the risk of condensation falling onto the drying crop is eliminated. Hot air drying can also be employed and care should be taken to ensure that there is no risk of fumes from the fuel coming into contact with the product. This is best achieved through the use of a heat exchanger so that only clean air comes into contact with the product.

A solar heat exchanger can also be used where hot air generated from the sun's rays on a heat exchanger are fed into a unit which contains the spice spread on a fine wire mesh. As with sun drying the crop should be in thin layers and turned to ensure even drying throughout the lot.

Dry Processing

The site processing plant should be in a dry area, as moist, humid conditions such as those found on swampy land encourage the growth of mold. There should be separation between raw material receipt, cleaning, washing, processing and storage to prevent any cross-contamination. Keep equipment and facilities clean. Remove any debris prior to using and make sure the equipment is dry before use. Use clean dry bags for storing and transporting dry, cleaned spices and keep dried spices away from any damp material or areas. Processing should achieve a uniform moisture content that is as low as feasible and certainly not higher than 12.0%.

Storage and Transportation

Temperature and humidity are key factors to control during storage and transportation to prevent formation of molds and hence the possible development of mycotoxins. Product should be stored in good, well-maintained warehouses that do not allow the ingress of water through leaks in the roof, walls, under doors, or through open windows.

It is also important to ensure that product is stored off the floor and away from the walls so that any potential condensation does not rewet the product. In addition there should be good air movement through the warehouse to prevent sweating and mold formation.

Temperatures within large warehouses can achieve levels ideal for mold growth, particularly towards the roof, thus suitable ventilation should be provided to ensure that both temperature and humidity are correctly managed. When product is moved into or out of the warehouse, ensure it is protected from rain during transportation. Make regular checks to ensure that the truck is covered and that there are no rips in the covers and no leaks on the undersides of trucks. Trucks must be clean, dry and odor-free. This also prevents cross-contamination from previously transported products (see allergens). Do not load and unload trucks when the product may be exposed to rain. Provide shelter so that the spice does not get wet during this operation.

Containers

Do not use damaged containers. Ensure there are no water leaks. Rust spots on the roof and sides of containers can be an indication of leakage. Check from the inside during daylight hours by closing all doors and looking for holes and undesirable smells. Ensure that the containers have not been previously used for dangerous and hazardous cargos according to the criteria set by International Maritime Organization (IMCO). These are cargos such as solid or liquid chemicals and other materials, gases and products for and

of the oil refinery industry, and waste chemicals and other cargos which have a damaging effect on foodstuffs.

Make transit times as short as possible and avoid long stops to ensure that excessive heat does not build up within the container. Particularly do not load any container too soon as it could get very warm awaiting shipment. It is preferable to use a shaded area or put another container on top to help to minimize the temperature increase within the container. The roof of an unprotected container can reach temperatures of over 80°C. The subsequent cooling off during the night results in condensation on the internal walls.

Stuffing and shipping

Make sure that pallets or wooden floors of containers are dry. Spices absorb moisture quickly if the bags get wet and as a result the moisture content increases considerably. Lining a container using cardboard, (single-side corrugated and waxed on the inside) has proven to be the best protection against condensation for bags in containers. Kraft paper has also been used successfully. Control that the lining is properly fastened, particularly in the ceiling so that the lining will not fall down and settle on the top bags.

When stuffing the container with bags or bulk, keep spices away from the roof. Bags should preferably be placed on a layer of pallets to avoid contact with the floor where condensation from the ceiling and walls could be a risk. If available, fully ventilated containers are preferable for spices in bags, especially if shipped from a high humidity origin. Alternatively the standard dry container with added paper/cardboard protection (top, sides and doors) is acceptable. Ventilation holes in the container are to be kept clear. Do not cover with tape. Absorbent 'poles' or boxes filled with calcium chloride absorb around 100% of their own weight in moisture and may be used for added protection if parties so agree. Enough top space between bags and the roof is important. Use the saddle stow method, which minimizes side contact and maximizes airflow between the bags. The storage, transportation and shipping advice mentioned here is also applicable to heavy metals, mycotoxins and pesticide residues.

HEAVY METALS

Heavy metals are chemicals that are known to be toxic to humans and are often impossible for the human body to metabolize. Therefore, their presence needs to be controlled, and should not exceed limits that have been set in regulation. Typical heavy metals found in spices are lead, cadmium, zinc, tin, arsenic and copper. While their presence is not currently considered to be a major problem, it is advised to ensure that their presence in spices is prevented.

Minimize Exposure to Potential Sources

Spices should not be grown in areas that are known to have the potential risk from heavy metals. Area close to large industrial areas should be avoided. Consideration

must be given to irrigation water and any upstream activity, such as heavy industry or mining operations should be closely monitored. Irrigation water should be tested annually for heavy metal contamination. The disposal of batteries, whether car or portable device batteries, should not be done near any spice growing or processing area. Batteries need to be disposed of correctly to ensure that they do not decay and contaminate growing areas. Any container that is used for transporting or storing spices must be of a suitable food grade material to prevent any risk of heavy metal contamination.

PESTICIDE RESIDUES

The use of pesticides and other plant protection chemicals is often a key requirement in ensuring that products are produced in an economic manner and are supplied to the market free from pest damage. As our understanding about the effect of pesticide residues on the human population increases, it is important that any potential residues should be controlled to protect the well being of the consumer.

Integrated Pest Management (IPM)

The principle of integrated pest management is to have a systematic approach to the use of plant protection chemicals so that their residues do not become a problem. IPM uses methods and disciplines that take care to minimize environmental impact and risks and optimize benefits. It is a systems approach to pest management that utilizes decision-making procedures based on either quantitative or qualitative observations of the pest problem and the related host or habitat.

A key concept in IPM programs is the application of decision-making processes to determine whether a chemical pesticide or other action is needed or not. Such decisions depend on evaluation of the pest problem often in a quantitative manner. IPM systems, such as insect sticky boards, trap crops, perimeter barriers, deterrent crops, predator pests, and natural or organically approved materials are encouraged and should always be used before any chemical intervention.

In the evaluation of agricultural crop pests, the point at which the economic benefit of pesticide use exceeds the cost of treatment is commonly referred to as the economic threshold. Academic definitions of the threshold concept may vary from discipline to discipline. Another term commonly accepted is action threshold, which is commonly applied to a set of conditions where action is warranted and may be based more on practical experience and judgment than on refined mathematical models relating biological and economic parameters.

Since IPM decision-making depends on field observations, it requires a person in the field to collect relevant information on the pest populations in question and related parameters concerning the crop or host habitat. Restricting the use of plant protection chemicals decreases the chance of pests becoming tolerant to those chemicals and also has

the benefit of achieving higher quality products, with less risk of rejection at the port of entry. If fertilizers are used, it is essential that they are from a reputable supplier. It is best practice to use a small amount of fertilizer regularly. If too much fertilizer is used at one time there is the risk of a growth spurt, which can weaken the wall structure of the plant and make it more susceptible to pest attack.

Growing location

The location of the growing area should be such that there is no additional risk of pest or disease attack of the plant due to the growing environment. This could be by growing materials away from waste disposal areas or ensuring that they are grown away from other plants which are known to attract high levels of pests or disease. For any growing area it is important to identify which crops are growing adjacent to that area and also pay particular attention to any crops that are non-food that are sited up wind of the growing area. The wind can carry pesticides applied to non-food crops, such as cotton, resulting in detectable levels of pesticide that are not permitted for a food crop.

Weeds within a growing area not only compete for nutrients but also encourage pests. Before using weed killer chemicals, mechanical removal of the weeds should be undertaken wherever possible. Weeds can have the additional risk that they are non-food crops and thus can produce toxin chemicals that should not be incorporated into the food crop. The manual removal of these weeds is highly encouraged.

Pest monitoring

The use of trap crops, i.e. those crops that are more attractive to a particular pest than the spice being grown, can have a significant effect in identifying any potential pest before the level of pests become unacceptable. The use of pheromone traps within a growing area helps to reduce the target pest by capturing them and also allows close monitoring of the pest so that when plant protection chemicals are applied, it is done in an appropriate manner.

The use of perimeter crops, growing a band of crop around the spice growing area, helps to prevent pests from gaining physical entry to the spice growing area and can also help to reduce wind drift effects and insect attacks.

Irrigation

To prevent the spread of disease it is better to use drip/sprinkler irrigation as this ensures that water supplies are used sparingly and also adds benefit by allowing any plant protection chemicals to be delivered directly to the plant. Flood irrigation techniques use excessive amounts of water and also increase the risk of spreading disease throughout any particular growing area.

Pesticides

If plant protection chemicals are required, natural systems such as neem based products should be used whenever possible, as these types of plant protection chemicals are more acceptable to the importing countries. When synthetic plant protection chemicals are used, it is important that these chemicals are permitted for the crop in question, by the country in which the crop is grown and is also permitted in any country to which the crop will be exported. Plant protection chemical residues are authorized for specific plants, so it should not be assumed that if a chemical is allowed for one crop that it is automatically approved for other crops. Seek advice from local agricultural office, if required. It is important that when a plant protection chemical is used, it should be purchased from an authorized dealer who can give assurances that the chemical that they are selling is authentic. Plant protection chemicals should not be purchased from any other source as the active principles in these chemicals may be at the wrong concentration or could even be prohibited.

Once acceptability of the plant protection chemical has been established, the levels of dose for a crop should be set to determine the dilution to be used and also the number of applications that are permitted. There should be documentation on the use of plant protection chemicals. This should include trade name, active chemical ingredient, product expiration date, application date, the dilution that has been applied, and the target pest.

Plant protection chemical operatives should be provided with suitable equipment to ensure that they can deliver the plant protection chemical correctly, especially when this is done at field level. In this case the use of measuring cylinders, or measuring caps, as some plant protection chemical manufacturers provide, will ensure that the application level is acceptable and thus residue will be within accepted tolerances. It is important that the equipment being used for pesticide application is washed thoroughly to ensure that there is no cross-contamination from previous use.

A pesticide holiday, typically a period of 10 to 30 days where pesticides are not applied, will help ensure that any plant protection chemicals used have the opportunity to dissipate throughout the plant prior to harvesting. Note: many plant protection chemicals state on their labels the minimum length of time that should be allowed between the last application of the chemical and the harvest and this advice should always be taken into account. It is important that pesticide containers, whether pouches or bottles, are disposed of correctly and not left within the growing fields where the application was carried out. It is important that any water used for irrigation is tested to ensure that it is free from pesticide residues from other crop run-off further upstream.

ALLERGENS

It is now clear that more and more people are becoming sensitive to allergens. This sensitization can, in some instances, result in anaphylactic shock with the smallest amount

of food ingredient causing this problem. It is therefore particularly important to ensure that spices are protected from potential allergens if they are destined for use on the world market. The U.S. has named eight major allergens that require labeling: peanuts, tree nuts, fish, shellfish, eggs, milk, soy, and wheat. Other countries have added additional items to their lists of allergens, including sesame and mustard seed.

Cross-contamination

Particular attention should be paid to peanuts as they can pose the highest risks for certain consumers and therefore it is imperative that during the growing, processing, storage and transportation periods that spices are protected to prevent contamination from peanuts. Care should be taken when rotating crops to ensure that a previous allergenic crop has not left any potential cross-contaminants in the growing area. It is also important that peanut derivatives, such as ground peanut oil, are not used in any way for the processing of spices or for the lubrication of any spice processing equipment.

Care should be taken while harvesting spice and allergen crops which are grown side by side in the same area. If the harvest is more or less during the same period, a suitable harvest gap should be given among these crops to avoid contamination. Any on-site storage of materials should ensure that spices are stored in a separate location to any allergens to prevent cross-contamination. It is now clear that certain consumers have allergic reactions to the presence of sulphur dioxide. Traditionally sulphur has been used within the spice industry, either to improve the visual appearance of spices or as a pest prevention method. The risk associated with sulphur dioxide should be carefully considered and if material is processed in such a way that sulphur dioxide residues are present, then this should be declared on the packaging and paperwork accompanying the lot.

Careful consideration needs to be given to the transportation of spices, especially from farm to exporter or processing. It is recommended that bags not be reused, however, if they are recycled, it is important that these recycled bags have not previously contained an allergen, such as peanuts. Care and attention should be taken in any common trading yard, where both allergenic materials and spices are handled, to prevent cross-contamination. A suitable cleaning operation needs to be adopted to ensure this risk is eliminated.

ENVIRONMENTAL COLOURS

It is well-documented in recent years that there has been an occurrence of deliberate adulteration of spices with artificial colours. In some cases these colours were not permitted as food colours and in other case these colours were not declared and thus were deemed to be misleading to the consumer. The spice industry has developed analytical methods and equipment to ensure these illegal dyes can be detected, even at very low levels which may be due to environmental contamination such as marking inks, colours to assist in applying plant protection products, fuel or dye contaminated water. While it is clear that the intentional use of dyes on spices is not permitted, there are steps that can be taken to prevent the presence of dyes from environmental contamination.

Bag markings

To ensure that spices are not coloured when bag markings are used, a food grade dye should be used wherever possible. Bags that have an open structure, such as jute bags, should not have bag marking made on the jute when the bag is already full of spices. In some cases the liquid dyes can go through the bag and contaminate a small portion of the contents so it is better that the bags are marked prior to filling or are marked using a label or tag.

Plant protection chemicals

When purchasing plant protection chemicals, particular attention should be given to the colour of any chemical purchased. Highly colour pesticides have the risk of leaving minor traces of colour on the crop, especially if there has been a late application in the growing cycle.

Fuel emissions

The fuel used for transportation and water pump operation is often coloured. Consideration should be given to the location of these pumps to ensure that the fuel itself or its exhaust residues do not expose the spices to environmental contamination. In addition, consideration should be given to the location of growing areas to avoid vehicle exhaust emissions becoming a problem if there are high traffic levels next to the growing area.

PROCESSING AIDS

A processing aid is a chemical that is used to help improve the processing of spices with no technological function within the finished spice. The spice industry has historically used a number of processing aids and it is important that the use be fully justifiable, safe and that the buyer is informed. Any processing aid must be food safe, approved for use within the country of consumption and declared to the buyer.

Dressing

The use of mineral oil to coat the surface of spices is not permitted. The use of vegetable oil should be declared to the buyer. Peanut oil should not be used because of concerns related to allergens.

Jute sacks

Some suppliers of jute sacks use mineral oil on the jute fibres to make the sewing of the bag easier. This is a practice that should not be used as mineral oil is toxic. Always ensure that bags are free from such processing oils, whether jute or any other material.

Recycled packaging

Care should be taken when using recycled packaging to ensure that any residues of mineral oils and other contaminants are removed before use.

GENERAL

Worker hygiene

Personnel handling the harvest should not be suffering from any contagious disease that could cause or act as a precursor to food borne health problems. In the event signs of diseases are observed, a supervisor should take the necessary measures to prevent the person(s) from handling the harvest until they are fully cured from the disease(s).

Basic sanitary practices should be practiced by personnel before and during harvesting and handling of harvest. Wherever possible, especially in primary sorting centres or drying yards, care should be taken to prevent the potential ingress of glass. This includes the removal of jewellery, the replacement of windows with non-glass material (such as Perspex), and prohibiting the use of any glass container or bottle. Workers involved in the handling of spices should be aware of the risk of contaminating the crop and thus eating and drinking should be prohibited in these areas.

Field sanitation

The field sanitation standards require the person supervising the harvesting of the crop to provide toilets, potable drinking water and hand-washing facilities to personnel in the field, ensure that each person makes reasonable use of the above and make sure that each person understands the importance of good hygiene practices.

MICROBIAL CONTAMINATION

All agricultural commodities carry the risk of being contaminated with pathogenic bacteria. From planting to consumption, there are many opportunities for bacteria, viruses, and parasites to contaminate produce. On the farm, soil, manure, water, animals, equipment, and workers may spread harmful organisms. There is no way to guarantee that everything we grow and consume is free of harmful microbial contamination. The risk can be reduced if preventative steps are taken.

Clean Soil

The improper use of manure can be a risk factor contributing to foodborne illness. Pathogens such as *E. coli* 0157:H7*, Salmonella,* and *Campylobacter* can be present in manure slurry and soil for three months or more, depending on temperature and soil conditions. Composting manure, incorporating it prior to planting, and avoiding top-dressing with fresh manure are important steps that can reduce the risk of contamination while making use of this important source of nutrients. Excluding domestic and wild animals as much as possible from production fields will help reduce the risk of manure (fecal) contamination.

Manure application

Manure should not be applied to the crop area for three months prior to harvesting. If the field is side dressed with manure, only well-composted manure should be used and care must be taken to make sure it does not touch the crop. Fresh manure and liquid manure should not be used once the crop is in the field.

Irrigation Water

When using surface water for irrigation, test quarterly for fecal coliforms, especially if water passes close to sewage treatment or livestock areas. Water may be filtered or used through a settling pond to improve water quality. Use potable water for crop protection sprays, such as fertilizer, herbicide or pesticide application. If overhead irrigation is used, use it early in the day, so that leaves dry quickly, minimizing microbial growth.

Clean Surfaces

Before harvesting or packing and at the end of each day, clean all bins or container that are being used. As some spices get primary processing at farm level ensure that any equipment used, such as threshers, are thoroughly cleaned before being used. This is particularly important on equipment that has been sitting unused since the last harvest. Equipment like this should be cleaned to remove product debris before it is put into storage to prevent pest and microbial contamination during the storage period. Ensure that any vehicle used to transport that crop around the farm is clean and dry. Pay particular attention to the previous use of the vehicle and clean it accordingly.

Chapter 9

Role of Spices Board of India in Promotion of Export

Spices Board (Ministry of Commerce and Industry, Government of India) is the flagship organization for the development and worldwide promotion of Indian spices. The Board is an international link between the Indian exporters and the importers abroad. The Board has been spearheading activities for excellence of Indian spices, involving every segment of the industry. Spices Board was constituted on 26th February 1987 under the Spices Board Act 1986 (No. 10 of 1986) with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960). Spices Board is one of the five Commodity Boards functioning under the Ministry of Commerce & Industry. It is an autonomous body responsible for the export promotion of the 52 scheduled spices and development of cardamom (small & large).

Main Functions

- Research, development and regulation of domestic marketing of small & large cardamom
- Post-harvest improvement of all spices
- Promotion of organic production, processing and certification of spices
- Development of spices in the North East
- Provision of quality evaluation services
- Export promotion of all spices through support for technology up-gradation, quality up-gradation, brand promotion and research & product development

Other responsibilities related to export promotion of spices

- Quality certification and control
- Registration of exporters
- Collection & documentation of trade information
- Provision of inputs to the Central Government on policy matters relating to import & export of spices

Multi-faceted activities

- Promotion of exports of spices and spice products
- Maintenance and monitoring of quality of exports

- Development and implementation of better production methods, through scientific, technological and economic research
- Guidance to farmers on getting higher and better quality yields through scientific agricultural practices
- Provision of financial and material support to growers
- Encouraging organic production and export of spices
- Facilitating infrastructure for processing and value addition
- Registration and licensing of all spice exporters
- Assistance for studies and research on better processing practices, foolproof quality management systems, improved grading methods and effective packaging techniques
- Production of promotional and educative materials in a variety of media for the benefit of exporters and importers.

Package of services for exporters/importers

- Helps exporters and importers in establishing mutual contact
- Identifies competent supply sources for specific requirements of importers
- Processes and forwards foreign trade enquiries to reliable exporters
- Organizes a common platform for interaction between Indian exporters and international buyers through participation in major international exhibitions and meetings
- Examine complaints from importers for corrective and preventive action
- Spearheads the quality improvement programme for Indian spices
- Manages a comprehensive and up-to-date data bank for exporters and importers
- Brings together international bodies, exporters and policy makers through contact group programmes
- Makes India's presence felt in major international food fairs; conducts food festivals and cooking demonstrations

The information about various schemes for export of organic spices are presented in Table 41.

Table 41. Schemes for export of organic spices

Component	Objective & Scale of Assistance
Organic cultivation of spices	Since the market for organic products is gradually registering an upward trend, there is large scope for promoting organic cultivation of spices in suitable locations. The Board is assisting growers for taking up organic cultivation of spices by providing a subsidy towards 12.5% cost of production subject to a maximum of Rs 12500/- per ha for identified spices.
Assistance for ICS groups	In the case of organic certification of grower groups, Internal Control System (ICS) is mandatory to educate and monitor the farmers on adoption of organic farming practices. It is proposed to provide 50 % cost of maintenance of ICS subject to a maximum of Rs 75000/- as subsidy.
Organic certification	The programme aims to help growers/processors of spices in acquiring organic certification which is a per-requisite for marketing as organic spices. Under this programme, Board provides assistance to group of farmers, NGOs and Farmers Co-operative Societies/ Associations in acquiring certification for their farms/processing units by meeting 50% cost of the certification subject to a maximum of Rs 1.00 lakh. Individuals are eligible for 50% of the cost of certification subject to a maximum of Rs 30,000.
Vermi-compost units	There is need to produce organic inputs in the farm itself to maintain soil fertility in organic production. In order to enable the growers to establish the vermi-compost units, Rs 3000 is offered as subsidy towards 33.33% cost of setting up a unit with one ton output of vermi-compost.
Bio agent production unit	The objective of the scheme is to make available quality bio control agent *viz.,* Trichoderma, Pseudomonas, EPN, Beauveria, Verticillium *etc.* in the spices growing areas by assisting in setting up bio- agent production units. These units will also serve as training cum demonstration centre for those growers who are interested in starting bio-agent production units. NGOs / SHGs / Spices Producer Societies / Farmers Group etc having technical capacity and credible records are eligible to avail benefit under the scheme. The Board will provide 50% of the cost equipments, accessories including mother culture required for setting up the bio-agent production unit subject to a maximum of Rs 1.50 lakh as subsidy.

Component	Objective & Scale of Assistance
Organic seed bank	The objective is to establish organic seed banks in the growers' field for multiplication of planting materials of indigenous varieties of ginger and turmeric having rich intrinsic value and herbal spices to retain purity and serve as a source for quality planting materials. Individual growers of these varieties of spices who are under organic certification are eligible to avail benefits under the scheme. The Board will provide 50% of cost of planting materials subject to a maximum of Rs 25,000/- per ha for indigenous ginger and turmeric varieties and Rs 15000/- for herbal spices as subsidy.
Organic value addition units	The objective of the scheme is to set up the primary processing / value addition units for organic spices in the growing areas to improve the quality of organic spices for export. Growers Societies / NGOs / Women groups/ SHGs/ ICS groups, etc which are having valid scope certificate for C1/C2/C3/Organic are eligible to avail subsidy under the scheme. It is proposed to provide 50% of cost of the equipments / machineries for setting up of primary processing unit for organic spices subject to a maximum of Rs 5.00 lakh as subsidy. No assistance will be given for construction of building.

EXPORT DEVELOPMENT and PROMOTION OF SPICES

The various programmes being implemented under the scheme 'Export Development and Promotion' intend to support exporters to adopt high technology in spice processing or to upgrade existing level of technologies for high-end value addition and to develop capabilities to meet the changing food safety standards in the importing countries. While encouraging the scientific facility/process up-gradation, the Board focuses on quality and food safety in the whole supply chain of spice trade. The major thrust areas are infrastructure development, research on new applications of spices and new product development, promotion of Indian spice brands abroad, setting up of infrastructure for common cleaning, grading, processing, packing, storing facilities (Spices Parks) in major spice growing/ marketing centres, promotion of organic spices/GI spices, etc. Special programmes are also undertaken for entrepreneurs from North Eastern Region.

A. Infrastructure Development

(i) Adoption of High technology & Technology and Process Up-gradation

In order to encourage high-end value addition in spices processing for better value realization while ensuring quality and food safety of the exported item to match with

international quality requirements, the programme offers grant-in-aid to the Registered Manufacturer exporters for adopting high technology in spices processing and for upgrading their existing technologies/facilities. The level of assistance is 33 per cent of the value of machinery/equipment for processing and packing, electrical installations and consultancy charges with a maximum of 100 lakh Rs per beneficiary for general areas and 50 per cent of the cost or Rs 200 lakh whichever is less, for special areas including North Eastern region.

The scheme for technology up-gradation offers same level of financial assistance to support exporters to upgrade their existing processing/packing facilities to manufacture products with high-end value addition and quality standards to match the requirements of foreign buyers.

(ii) Setting up/ Up-gradation of Quality Control Labs

The programme proposes to provide assistance to Registered Manufacturer exporters who propose to set up/upgrade in-house quality control laboratories with an objective to promote quality by establishing facilities to undertake analysis of various parameters on quality of the products including detection of pesticide residues, aflatoxin and physical, chemical and microbial contaminants. Assistance is limited to 33 per cent of the cost of laboratory equipment/ instruments, glassware, laboratory furniture and other accessories including electrical installations and consultancy charges for setting up/up-gradation of in house quality control laboratories.

(iii) Quality certification, validation of check samples and training of laboratory personnel

Spices Board assists exporters of spices for acquiring quality systems like ISO, HACCP and such quality certifications in their processing units wherein 33 per cent of the charges incurred for accreditation/ certification of processing units for ISO HACCP, GMP, etc., would be given as grant-in-aid. The board also provides financial assistance towards analytical charges for validation/standardization in laboratories abroad and charges/ expenses for upgrading technical knowledge of laboratory personnel of the exporters in reputed international laboratories preferably approved by USFDA and EU.

B. Trade Promotion

(i) Sending business samples abroad

The Board assists those exporters who wish to finalize business transactions on the basis of samples requested by buyers and to have better clarity. The Board reimburses the courier charges to a maximum of Rs 50,000 per year. Registered manufacturer exporters of spices having Spice House certificate/ Spice Board Logo, certified organic spice growers

and exporters and brand registered exporters are covered under this programme.

(ii) Printing promotional literatures/brochures

Promotional literature and brochures are the preliminary promotional material to fetch the buyers for the produce. Exporters who have SHC/Logo/Brand registered with the Board or those who have organic certifications are eligible to avail the assistance at the rate of 50 per cent of the cost subject to a maximum of Rs 2 lakh per brochure and maximum twice during the plan period.

(iii) Packaging development and bar coding registration

The programme envisages improvement and modernization of export packaging for increased shelf life, reduced storage space, establishing traceability and better presentation of Indian spices in markets abroad. Registered exporters can avail assistance to the tune of 50 per cent of the cost of packaging development and bar coding registration subject to a ceiling of Rs 1.00 lakh per exporter per year.

C. Product Development and Research

There is a good scope for deriving new end uses and applications from the spices produced within the country. The value realization in these product/formulations would be much higher than what would be available if they were exported solely as condiments. Development of new end products of spices involves scientific research in the areas of nutritional, pharmaceutical and cosmetic values of spices as introduction of new end products would go a long way to create patentable products with maximum value realization. This scheme offers financial assistance for product research/development, clinical trials, patenting, and test marketing. All registered manufacturer exporters and recognized research institutions who wish to develop new end products of spices and who wish to involve in clinical trials to document and establish the known properties of spices can avail this scheme. The amount would be disbursed in the form of grant-in-aid at 50 per cent of the cost subject to a maximum of Rs 25 lakhs in agreed installments based on the completion of different phases of the research and study.

D. Spice Processing in North Eastern Region

North Eastern region of India produces spices such as Cardamom (Large), Chilli, Turmeric and Ginger, organically grown with varied pungency and indigenous qualities compared to the produce from other parts of India. However, the major area of trade concern for NE region is the lack of exportable surplus and inadequate processing facilities to cater to the need of export industry. This scheme proposes to provide financial assistance to the spice growers, co-operatives, Farmers Associations, NGOs representing spice growers and individual entrepreneurs in North Eastern and hill states to establish primary processing facilities for spices. Grant-in-aid is provided to the tune of 33 per cent of the cost of all types of primary processing facilities subject to a maximum of Rs 25

lakhs during the plan period per beneficiary. For farmers group assistance is up to 50 per cent of the cost of primary processing facility.

E. Brand Promotion Loan Scheme

The objective of the programme is to assist penetration of Indian brands in the identified overseas markets, through a series of measures leading to the positioning of quality Indian spice brands within the reach of the foreign consumers with a clear mark of traceability and food safety. Under this programme, exporters who have registered their brand will be provided financial assistance towards interest free loan up to Rs 1 crore per brand. With an objective to position specified brands in the identified outlets and selected cities abroad, 100 per cent of slotting/listing fee, promotional expenditure and 50 per cent of the cost of product development is considered under the project.

F. Market Study Abroad

The areas and other critical sectors for Indian spice products are to be studied in depth to formulate appropriate pricing and devise a suitable promotional and marketing strategy. Market survey by the Board helps to find out the strengths, weaknesses, threats and opportunities for Indian spices. The study assumes significance especially to small scale exporters and new entrants who require advice more appropriately with the changing market situations and other regulations for efficient handling of their export operations. Based on this study, brand promotion efforts of exporters are pursued.

G. Participation in international trade fairs/exhibitions/meetings and trainings

(i) Participation by the Board

The Board is an international link between the Indian exporters and the importers abroad. As part of its initiatives for promotion of Indian spices in international markets, spices board participates in major international trade fairs.

(ii) Participation by Exporters

International fairs and exhibitions provide the participants enormous opportunities to promote their products and services. Registered exporters who have obtained Indian Spice Logo/ Spice House Certificate/ Certified grower and exporter of organic spices and those exporters whose brand names have been registered with the Board can avail the assistance. The assistance is in the form of reimbursement of airfare (Economy Excursion class) for visits to trade fairs subject to a maximum of Rs 60,000 for Logo/SHC holders and Rs 40,000 for holders of registered brand and organic certificate per exporter per year. In case of hiring independent stall, the extent of assistance will be 50 per cent of the cost per exporter subject to ceiling of Rs 1.00 lakh.

(iii) Market Development Assistance (MDA)

Registered exporting companies with an FOB value of exports effected up to Rs 30 crores in the preceding year are eligible for getting assistance under the MDA guidelines of the Ministry of Commerce and Industry, for participation in trade delegations/ buyer-seller meets/fairs/exhibitions abroad to explore new markets for export of their specific products and commodities in the initial phase. This is Subject to the condition that the exporter has completed 12 months membership with concerned EPC and is filing returns with concerned EPC/organisation regularly. The assistance is for airfare in economy class and/or charges of the built up furnished stall subject to an upper ceiling per participation to eligible spice exporters.

H. Indian Spices Logo and Trade Mark

The Board awards the logo selectively to Exporters who have certified processing and quality control capability and who maintain a high level of hygiene and sanitation at all stages. Registered exporters of spices and spice products in processed and packed form of any weight can come under the logo programme. By affixing the logo on the exported pack, the consumer will be aware of the intrinsic qualities and acquired superiority of Indian spices. The trade mark logo is registered in 22 main spice importing countries.

I. Registration of Brand Name

The objective of the programme viz., , 'Registration of Brand Name' is to support export of spices/spice products in consumer packs under Indian brand names and gain market share in the fast growing market of branded consumer packs. The board has specified packing standards for different spices for different unit weights in consultation with Indian Institute of Packaging. All brand registered exporters have to renew their registration after every three years.

J. Registration & Licensing

Registration & Licensing is a part of the regulatory functions of the Board. The board issues certificate of registration as Exporter of Spices (CRES) and also the Auctioneer and Dealer Licences for trading in Cardamom (Small and Large). The CRES and Dealer and Auctioneer Licences are issued for a block period of three years i.e. 2014-17.

K. Exporter Award

Spices Board has instituted Export Awards and Trophies to honour the exporters of spices who excel in their exports of spices in various categories every year.

L. Major initiatives

(i) Spices Parks

With a view to empower the farmers to get better price realization and wider markets for their produce, crop specific Spices Parks have been established in major production/

market centers. The Parks will facilitate the farmers to utilize the common infrastructure facilities for cleaning, grading, packing and steam sterilization to ensure the quality of the product and thus a higher price. The scientific packing and warehousing facilities in the park and the quality testing facility in the laboratory will improve the overall quality of spices produced in the locality. Spices Park is a well-conceived approach to have an integrated operation for cultivation, post harvesting, processing for value-addition, packaging and storage of spices and spice products. The Board has established/establishing eight Crop specific Spices Parks in the major spices producing/market centres.

(ii) Spice Complex at Sikkim

Government of Sikkim has allotted 10 acres of land to Spices Board of which 8 acres is to be used for establishment of Spice Complex and 2 acres is to be used for the use by the State Government. The Board has prepared draft DPR after inviting EOI for establishment of Spice Complex at Sikkim.

(iii) Electronic Auction for Cardamom

The E-auction of cardamom (small) continued in the Spices Park at Puttady of Idukki District, Kerala and in Bodinayakanur of Tamil Nadu. Manual auctions also continued in other states like Karnataka and Maharashtra for cardamom (small) and in two places in Sikkim and Darjeeling District of West Bengal for Large Cardamom. The Cardamom (Marketing & Licensing) Rules, 1987 were amended and new notification was released, which will make the system more competitive, transparent and reduce the time in making payment to auctioneers and farmers. Under the new procedure, registration fee for E-auctioneer License and Manual Auctioneer Licence is Rs 50,000 and Rs 5,000 respectively. Also, for E-auctioneer Licence, the applicant shall provide required Security Deposit in the form of Bank Guarantee valid for the block period for which the applicant desires to obtain the auctioneer license. The Board has established an e-auction centre at Bodinayakanur in the Board's Regional Office premises and this centre was inaugurated by Chairman, Spices Board on 30th May, 2016.

(iv) Signature Stall

Flavourit is an initiative to share and sustain the passion of spices. Flavourit selects the finest of the spices from the farms where growing spices is a tradition and faith. The commitment of Flavourit to quality and intimacy with purity roots deep into the spirit of Indian spices. Flavourit strives to spread the pleasure of Indian spices throughout modern world. The pleasure of spices is preserved by the people who work on the soil with Flavourit. Flavourit streamlines the efforts of people working at grassroots with market forces. It helps growers, collectives and developmental ventures to bring economic and social inclusion.

Flavourit connects nature's traditions to the modern world, bringing together progressive farmers and grass root organizations, whose hard work ensures best quality spices for wellness. Flavourit is also committed to health and wellness of people and planet. It ensures natural taste and aroma of the spices, packaged in ecofriendly ways, suitable for modern lifestyle. In order to promote these quality spices, Spices Board has set up three signature stalls called Spices India in the Lulu Mall at Cochin and in Delhi.

(v) Spice Museum at Willingdon Island, Kochi

The Port Trust has allotted 15.987 cents of land to Spices Board. The Board has entered into an MoU with Cochin Port Trust at Willingdon Island on lease basis to set up Spices Museum and signature stall. The objective of the museum-cum- signature stall is to facilitate the tourists for sourcing authentic Indian spices to prepare flavoured dishes and buying them as presents and souvenirs of Kochi, famous for its wide variety of spices. It will also update the knowledge on spices industry besides touch and feel of major spices. Board has entrusted an agency for preparing the DPR.

(vi) Spices Board of India Chair Professorship at IIPM, Bangalore

The Spices Board has provided financial support to Indian Institute of Plantation Management (IIPM), Bangalore for establishing Research Chair under the "Commodity Boards of India Chair Professorship" program. The Research Chair is headed by a Senior Faculty/Post- Doctoral fellow, as a Chair Professor. Spices Board has deputed Dr. G. K. Vidyashankar, Deputy Director, Spices Board for the Chair Professorship for a period of two years. The Research findings/study/publications of the Chair would provide a much needed knowledge in the requisite field and also serve as a significant resource for spices sector. Spices Board has provided an annual grant of Rs 15.00 lakhs to IIPM for establishing the Chair for "Spices Board of India Chair Professorship" in 2016-17. The fund will be utilized for the purpose directly related to the setting up of Chair, its research & CARP activities, and in the conduct of various studies in the Spices sector in consultation with Spices Board. A Monitoring Committee constituted by the Board monitors and reviews the activities as well as the utilization of the funds by the IIPM.

(vii) Buyer Seller Meets

There is a wide gap between the farm gate price and the terminal market price of spices. In order to improve the value chain and to realize better price to growers, the Board organised three buyer-seller meets at Guwahati, Kota and Hyderabad during 2016-17 in the spices growing areas including NE region by bringing the farmers/farmers groups, NGOs, exporters, and institutional buyers on one platform to establish linkage between them and to eliminate middlemen in market channel.

Chapter 10

Research Institutions and Major Varieties of Seed Spices

(1) Seed Spices Research Station, Jagudan (Gujarat)

Jagudan centre of Sardarkrushinagar Dantiwada Agricultural University (SDAU) is the Main Spices Research Station in Gujarat which was established in 1961 with the mandate to take up multidisciplinary research work in various seed spices(cumin, fennel, coriander, fenugreek, dill seed and ajwain), vegetable (chilli brinjal, bottle gourd, cucumber, okra, beans, sponge gourd, bitter gourd), medicinal crops (isabgul), seedling/ sapling raising of different crops(papaya, sapota, lemon, pomegranate, mango, orange, guava, date palm and aonla) and education – Polytechnic in Horticulture to meet the need of developing production and protection technologies for increasing spices and horticultural production in Gujarat as well as export to abroad.

This Center for Research on Seed Spices located in the village Jagudan is situated at 10 km far from Mehsana and 60 km from Ahmedabad on Ahmedabad – Delhi railway line and state highway, whereas, it is 100 km far from Sardarkrushinagar, the Head Quarter of S. D. Agricultural University. The capital of Gujarat, Gandhinagar is 45 km away from Jagudan. Mehsana is well connected by express trains with major cities of the country. It is also connected by direct bus services from major leading cities of Gujarat and neighboring states Rajasthan and Maharashtra. Asia's biggest APMC market for seed spices (cumin and fennel) is located at Unjha is 32 km away from Jagudan.

Objectives

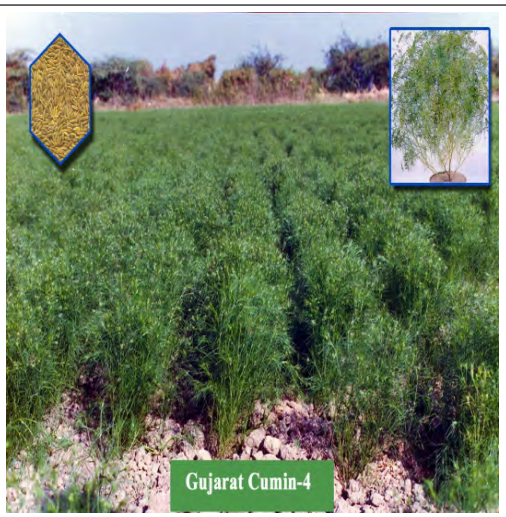
- Collection, evaluation, characterization and conservation of germplasm
- Breeding variety with high yield potential, quality and resistance to biotic and abiotic stresses
- Developing efficient agro-techniques for achieving the high production and productivity
- Evolving better and efficient management system for control of pests and diseases
- Study of nutritional and water management aspects
- Research on seed technology for production of quality seeds of improved varieties
- Study of economics of production and marketing
- Development of pre and post harvest technologies for better processing, storage and utilization

- Development of expert oriental technology for export of new and value added products towards national economy
- Transfer of technologies for farmers and extension agencies
- Establishment of systematic link to exchange germplasm materials and information with other national and international institutions.

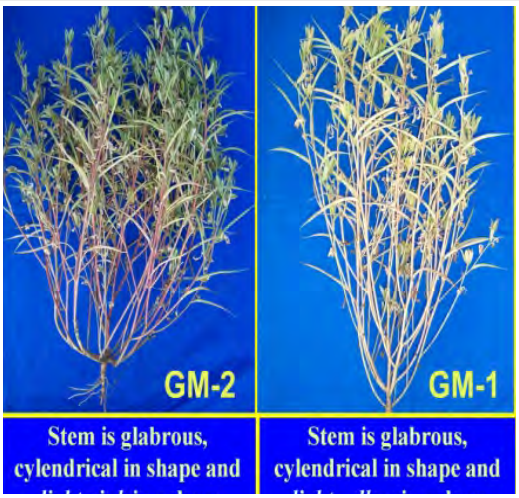
Important Varieties Developed

The details of major varieties developed by Seed Spices Research Station, Jagudan is depicted in Table 42.

Table 42. Major varieties developed by Seed Spices Research Station, Jagudan

Sr. No.	Photograph of Variety	Descriptors of the variety	
1		**Gujarat Cumin -3 (GC-3)**	
		Average plant height	21.8
		Days to maturity	98
		Number of branches/plant	5.1
		Number of umbels/plant	16.6
		Number of umbellate/umbel	4.7
		Number of seeds/umbellate	6.2
		1000 seed weight (gm)	4.0
		Volatile oil (%)	--
		Average seed yield (kg/ha)	661
2		**Gujarat Cumin-4 (GC-4)**	
		Average plant height	31.2
		Days to 50 % flowering	60
		Days to maturity	110
		Number of branches/plant	7.9
		Number of umbels/plant	40.1
		Number of umbellate/umbel	4.7
		Number of seeds/umbellate	6.2
		1000 seed weight (gm)	4.0
		Volatile oil (%)	4.2
		Average seed yield (kg/ha)	1250

Sr. No.	Photograph of Variety	Descriptors of the variety
3		**Gujarat Cumin-5 (GC-5)** Average plant height 27.67-34.15 Days to maturity 91-98 (92) Number of branches/plant 4.30 -26.67 Number of umbels/plant 13.00 -23.93 Number of umbellate/umbel 4.70- 4.20 Number of seeds/umbellate 21.0-31.7 Volatile oil (%) 3.55% Average seed yield (kg/ha) 571.20
4		**Gujarat Fennel-2 (GF 2)** Average plant height 126.1 cm Days to 50 % flowering 97.0 Days to maturity 159.0 Number of branches/plant 7.1 Number of umbels/plant 20.6 Number of umbellate/umbel 26.9 Number of seeds/umbellate 27.1 1000 seed weight (gm) 6.5 Volatile oil (%) 2.4 Average seed yield (kg/ha) 1940
5		**Gujarat Fennel -11 (GF-11)** Average plant height 144.3 Days to 50 % flowering 105 Days to maturity 157 Number of branches/plant 8 Number of umbels/plant 18 Number of umelletes/umbel 32 1000 seed weight (gm) 7.4 Volatile oil (%) 1.8 Average seed yield (kg/ha) 2500 -2589

Sr. No.	Photograph of Variety	Descriptors of the variety	
6		**Gujarat Fennel-12 (GF-12)**	
		Days to 50 % flowering	92-104
		No. of branches / plant	5.1-7.3
		No. of umbels / plant	7.1-18.2
		No. of umbellates / umbel	20.3-26
		No. of seeds/umbellate	22.5-27.5
		Plant height (cm)	135.4-159.3
		Days to maturity	151-160
		1000 seeds weight (gm)	5.30-8.12
		Volatile oil percentage	1.9 - 2.2
7	 	**Gujarat Coriander-3**	
		Growth Habit	Erect
		Plant Height (cm)	(95.00)
		Days to flowering	(54.33)
		No. of branches/plant	(7.23)
		No. of umbels/plant	(28.53)
		No. of umbellate/umbel	(6.93)
		No. of seeds/umbellate	(8.80)
		1000 seeds weight (g)	(10.82)
		Seed Colour	Light Brown
		Seed Shape	Oval
8		**Gujarat Methi-1 (GM-1)**	
		Average plant height	67.1
		Days to 50 % flowering	50
		Days to maturity	115
		Number of branches/plant	6.3
		Number of pods/Plant	58.9
		Length of Pod	9.3
		Number of Seeds/pod	18.7
		1000 seed weight (gm)	13.5
		Average seed yield (kg/ha)	1498

Sr. No.	Photograph of Variety	Descriptors of the variety	
9		**Gujarat Methi -2 (GM-2)**	
		Average plant height	65.9
		Days to 50 % flowering	53
		Days to maturity	116
		Number of branches/plant	5.5
		Number of pods/Plant	62
		Length of Pod	11.3
		Number of Seeds/pod	17.5
		1000 seed weight (gm)	16.49
		Average seed yield (kg/ha)	1920

Contact: Research Scientist (Spices)
Seed Spices Research Station
Sardarkrushinagar Dantiwada Agricultural University
Jagudan-382710, Dist:Mehsana (North Gujarat)
Tel: 02762 – 285337, e-mail: rspsices@sdau.edu.in
www.sdau.in

(2) National Research Centre on Seed Spices, Ajmer (Rajasthan)

The Indian Council of Agricultural Research established the National Research Centre on Seed Spices at Ajmer during the 9th Five Year Plan to initiate research work on seed spices especially aimed to improve the productivity and quality with reference to domestic demand and export and value. The centre came into existence on 22 of April, 2000.

A number of technologies including varieties, precision nutrient and water management through drip fertigation, protected cultivation, plant protection and post harvest handling & processing etc. have been developed at NRCSS for improving the production and quality of seed spices. NRCSS has more than 30 collaborations with various institutes around country and working with dedication for betterment of seed spices production in India and its stakeholders.

Mandate

- Basic, strategic and applied research on genetic resource management, crop improvement, production and protection technologies for enhancing and sustaining productivity of safe seed spice.
- Transfer of technology and capacity building of stakeholders for enhancing and sustaining productivity of seed spices.

Major activities

The Institute has already developed 16 varieties of 8 seed spice crops. Controlling cumin wilt and blight diseases is now receiving major attention. Besides these, agronomic practices are also being standardized for different crops. Research work has also started in Plant Pathology, Plant Physiology, Soil Science and Entomology. Research on protected cultivation and organic farming and application of Good Agricultural Practices (GAP) is also on the anvil. The seed processing plant has also been established and the research on post harvest technology of the seed spices particularly processing and storage is being initiated. The Institute is housed in the newly constructed Laboratory Cum administrative Building and equipped laboratories. This National Centre is now considerably expanding its research programme by initiating collaboration with a number of research institutions and universities. The Research Centre has also opened up its portals to post graduate students who wish to work on seed spices and have started a Farmers Club and a Farm Consultancy Service to effectively transfer the technology developed by the centre.

Research

NRCSS research is guided by science with a human touch. By giving a human touch to agricultural science, NRCSS dedicates its work to the farmers and spice industry of the nation. The research programs of the institute (both institute and externally funded) are carried out under various projects, which are time bound, and with specific objectives.

Objectives

- Collection, conservation, evaluation and cataloguing of germplasm.
- Development of varieties of high yield, quality and resistance to biotic and abiotic stresses through conventional and biotechnological approaches.
- Standardizing propagation methods to ensure large scale production and distribution of high yielding genotypes
- Development of agro-techniques for increasing production and productivity.
- Integrated pest and disease management.
- Post harvest technology
- Socio-economic aspects of cultivation, marketing and information dissemination in seed spices.
- Investigation on nutraceuticals and pharmacokinetics aspects of seed spices.
- Collection, conservation, evaluation and cataloguing of germplasm.
- Development of varieties of high yield, quality and resistance to biotic and abiotic stresses through conventional and biotechnological approaches.
- Standardizing propagation methods to ensure large scale production and distribution of high yielding genotypes
- Development of agro-techniques for increasing production and productivity.
- Integrated pest and disease management.
- Post harvest technology

- Socio-economic aspects of cultivation, marketing and information dissemination in seed spices.
- Investigation on nutraceuticals and pharmacokinetics aspects of seed spices.

Major varieties developed

The information about major varieties developed by NRCSS, Ajmer is presented in Table 43.

Table 43. Major varieties developed by NRCSS, Ajmer

Sr No.	Name of Variety	Year of Release	Maturity days	Yield (q/ha)	Other specification
Cumin					
1	RZ-19*	**1988**	120-140	5.0 to 6.0	-
2	RZ-209*	1995	140-150	6.5	Tolerance to wilt and blight
Fennel					
1	AF-1, 2	2006	210-215	19.5 to 25.1	Suitable for early and main season
Coriander					
1	NRCSS ACr-1	–	120-130	–	Resistant to stem gall and tolerant to powdery mildew, dual purpose, medium size, round seed, suitable for export purpose
Fenugreek					
1	NRCSS AM-1	2005	135-140	27.2	High yielding, good biomass, large seeded, less bitter type
2	NRCSS AM-2	2005	135-140	18.1	High yielding, good biomass, medium seed size, more bitter type

* Variety developed by SKN College of Agriculture, Jobner, Rajasthan

Contact : Director
National Research Station on Seed Spices
Ajmer, Rajasthan
Tel: 0145-2684401, Fax: 0145-2684417, E-mail: nrcss.director@gmail.com
http://www.nrcss.res.in

Chapter 11

Export Procedure

[1] Establishing an Export Firm/Company

Setting up or formation of an Export Firm/Company is the first step to start export-import business. New entrepreneur may start his business as an individual (proprietary concern) or partnership firm or a joint stock company or even forming cooperative society or producers' company. Individual (proprietary concern) is the simplest way. Partnership firms should execute a partnership deed as per Indian Partnership Act 1932 on a Non Judicial Stamp Paper as per the Stamp Act of the State Government and register the partnership firm with the Ministry of Corporate affairs.

Some useful Tips for Setting up of an Export Firm

- **Name of Firm**: Find attractive name for your Export Firm. It should have only two to three words. First word should be unique, inspiring and meaningful. It should be easy to spell and speak. Last word should be preferably Exports or International or Overseas. It indicates that you are operating in an international market. Exim or Impex or such other hybrid words should be avoided.

  For example, **Orbit International, Skyline Overseas, ABC Exports**

  If you are dealing with a particular commodity like, agro, spices, chemicals, engineering etc., you may include it in the middle of the name.

  For example, **Sun Agri Exports, Maruti Fresh Fruits International**

- **PAN Card**: Once you decided name of your firm, now go for obtaining PAN Card as it is must for getting your IEC number. Apply to concerned Income Tax office for PAN number. In case of proprietorship firm, PAN of person name is valid. In other cases, PAN of company name is required.
- **Company Logo**: Create / Design attractive logo of your firm to showcase your dream/vision
- **Local Registration:** Get Shop Act Licence from local municipal authority or registered with concerned government authority. If you are engaged in manufacturing, register with District Industry Centre to get SSI number or get Udhyog Aadhar No. Get membership of local Chamber of Commerce which will be helpful in opening Bank Account as well as getting Certificate of Origin and RCMC.
- **Bank Account**: Open a current account of your firm in any Public Sector Bank or any reputed Private Sector Bank like, ICICI Bank, HDFC Bank, UTI Bank, etc. It is advisable to open current account with a RBI authorized (AD) bank dealing in Foreign Exchange directly and not with any cooperative bank as they don't deal in foreign currency.

- **VAT/ST/CST**: This is not required at this stage for getting IEC number. It will be required at later stage to get Tax benefits for exports as export goods are exempt from VAT/CST. Exporter can avail this exemption only if registered under VAT/CST.

Build a Corporate / International Image

Your credibility is a key to your global success. Even if you run a small company you should present yourself internationally as a solid and reliable potential partner. A few small subtle changes and touches will add considerably to your global appearance. Use "+91" the international dial code and the word "India" in contact details and business cards.

Learn about Export/Import Regulations and Terms of Trade

Exporting is complex and competitive. Your staff should know the differences between domestic and international trade. Spend some time to learn about export procedure, registration, regulations, terms of trade, delivery terms, methods of international payments, International Trade ethics and so on. Hire experienced people or train your staff.

[2} Obtaining IEC Number (Importer-Exporter Code)

An IEC is a 10 digit number which is mandatory for undertaking export/ import Business. No export or import shall be made by any person without obtaining IEC number unless specifically exempted. Now the facility for IEC in electronic form or e-IEC has also been operationalised. An IEC allotted to an applicant shall have permanent validity unless cancelled by the competent authority. The IEC will cover all branches / divisions / units / factories of the applicant. Only one IEC shall be issued against a single PAN.

Online Procedure for getting online IEC Number

- Visit DGFT website (http://dgft.gov.in).
- Go to "Online IEC Application".
- Apply on line providing necessary documents and application fees.
- Currently, application fee is Rs 500 which is to be paid online through net banking or credit/debit card.
- Application has to be digitally signed by Proprietor/ Managing Partner/ Designated Partner /Director/ Secretary or Chief Executive of the Society/ Managing Trustee / Karta as the case may be.
- List of documents required for various types of export firms is available in the website.
- After processing of e-IEC application applicant would be informed through e-mail that his/her application for e-IEC has been approved and a computer generated e-IEC is available on the DGFT website. By clicking on "Application Status" after having filled and submitted the requisite details in "Online IEC Application" webpage, applicant can view and print his/her e-IEC. Or a computer generated rejection letter

would be sent at the e-mail address of the applicant. If applicant desires to apply a fresh, he/she may do so after repeating the process as above and by paying Rs 500/- as application processing fee.

- Only one IEC is required for export/import of any number of products for life time.
- Existing IEC can be modified by applying online when required.

[3] Obtaining RCMC of Concerned Export Promotion Councils (EPCs)

After obtaining IEC Number, it is advisable to obtain Registration-cum-Membership Certificate (RCMC) from Export Promotion Council (EPC) related to the products you want to export eg. APEDA for specific agro products including fruits and vegetables, Spice Board for spices and so on. RCMC is required for availing authorization to import/ export or any other benefit under FTP and to avail services/ guidance.

Export Promotion Councils (EPCs) are organizations of exporters, set up with the objective to promote and develop Indian exports. Each Council is responsible for promotion of a particular group of products/ projects/services. EPCs are also eligible to function as Registering Authorities to issue RCMC to its members. DGFT has recognised 37 various EPCs/ Commodity Boards/ Authorities based on product groups to help exporters in various aspects.

The basic objective of EPCs is to promote and develop the exports of the country. Each Council is responsible for the promotion of a particular group of products, projects and services. The main role of the EPCs is to project India's image abroad as a reliable supplier of high quality goods and services. In particular, the EPCs shall encourage and monitor the observance of international standards and specifications by exporters. The EPCs shall keep abreast of the trends and opportunities in international markets for goods and services and assist their members in taking advantage of such opportunities in order to expand and diversify exports.

Major Functions of EPCs

- To provide commercially useful information and assistance to their members in developing and increasing their exports;
- To offer professional advice to their members in areas such as technology upgradation, quality and design improvement, standards and specifications, product development, innovation, etc.;
- To organise visits of delegations of its members abroad to explore overseas market opportunities;
- To organise participation in trade fairs, exhibitions and buyer-seller meets in India and abroad;
- To promote interaction between the exporting community and the Government both at the Central and State levels; and
- To build a statistical base and provide data on the exports and imports of the country, exports and imports of their members, as well as other relevant international trade data.

Applying for RCMC

- Application is to be made on line through the website of selected EPCs.
- While applying for RCMC, an exporter has to declare his/her main line of business in the application. The exporter is required to obtain RCMC from the EPC which is concerned with the product of his/her main line of business.
- In case an export product is not covered by any Export Promotion Council/ Commodity Board etc., RCMC in respect thereof is to be obtained from Federation of Indian Exporters Organization (FIEO).
- In case of multi product exporters, not registered with any EPC, where main line of business is yet to be settled, the exporter has an option to obtain RCMC from FIEO.
- In respect of multi product exporters having their head office/ registered office in the North Eastern States, RCMC may be obtained from Shellac & Forest Products Export Promotion Council (except for the products looked after by APEDA, Spices Board and Tea Board).
- In respect of exporters of handicrafts and handloom products from the State of Jammu & Kashmir, Director, Handicrafts, Government of Jammu and Kashmir is authorised to issue Registration Cum Membership Certificate (RCMC).
- As the Registration and Membership is decentralized, exporters/ desirous organizations are requested to file applications for membership with the concerned Regional Offices.
- Registration Fee varies from EPC to EPC. There may be variation in fees for different categories of membership. Normally it ranges from Rs 5000 to 10000.
- RCMC shall be deemed to be valid for five years.

[4] Selection of products for export and finding their ITC (HS) Codes

More than 10,000 products are exported from India including agricultural and non-agricultural products. Most of them (about 96%) are freely exportable except few products appearing in prohibited/restricted list). Such lists are available on DGFT's website.

To select your products for export, first you should make a list of potential products which you know about. Then collect export/import data of your products from various websites of government institutions, EPCs and private information providers. All the exportable products have been classified according to international standards. In India, 8 digit ITC (HS) Code is used for this purpose.

ITC (HS) code

ITC (HS) codes are better known as Indian Trade Classification (ITC) and are based on Harmonized System (HS) of Coding. It was adopted in India for import-export operations. The Harmonized Commodity Description and Coding System, also

known as the Harmonized System (HS) of tariff nomenclature is an internationally standardized system of names and numbers to classify traded products. It came into effect in 1988 and has since been developed and maintained by the World Customs Organization (WCO) an independent intergovernmental organization based in Brussels, Belgium, with over 200 member countries.

Fundamentally, the HS is organized logically by economic activity or component material. The HS is organized into 21 sections, which are subdivided into 98 chapters. The 98 HS chapters are further subdivided into approximately 5,000 headings and subheadings. Section and Chapter titles describe broad categories of goods, while headings and subheadings describe products in more detail. Generally, HS sections and chapters are arranged in order of a product's degree of manufacture or in terms of its technological complexity. Natural commodities, such as live animals and vegetables, for example, are described the early sections of the HS, whereas more evolved goods such as machinery and precision instruments are described in later sections. Chapters within the individual sections are also usually organized in order of complexity or degree of manufacture.

The World Customs Organization (WCO) has been administering 6 digits HS codes schedule. The HS codes have been being used by 98% of Import Export trade all over world. The first two digits designate the HS Chapter. The second two digits designate the HS heading. The third two digits designate the HS subheading. HS code 100630, for example, indicates Chapter 10 (*Cereals*), Heading 06 (*Rice*), and Subheading 30 (*Semi-milled or wholly milled rice, whether or not polished or glazed*).

However, each country can modify by adding two digits or four digits as per their requirements without changing first six digits. In other words, first six digits of HS code (HTS code) are same in all countries. For example United States uses 10 digits codes whereas India uses 8 digits code. For example, ITC (HS) Code for Mango Fresh is 08045020 which indicates Chapter No (08), Heading (04), Subheading (50) and Country code (20).

Since its creation, the HS has undergone several revisions - ostensibly, to either eliminate headings and subheadings describing commodities that are no longer traded, or to create headings and subheadings that address technological advancements and environmental concerns. The latest version of the HS effective from January 1, 2017 is available on DGFT's website. ITC (HS) Code of fruits and vegetables is give in Appendix -I.

How to find HS code for a product you wish to export/import?

- Visit DGFT website. Go to Policies
- Download "ITC (HS) 2017"
- Find appropriate Section. Find appropriate Chapter heading. Look into sub headings and finally find 8-digit ITC(HS) Code of your product.
- Visit EPC's website and find list of products along with their HS Code.
- Or you may use Google Search.

Know about export/import policy of your product

- Visit DGFT website.
- Go to Policies
- Download "Foreign Trade Policy (FTP) Schedule-2 (Export Policy).
- Verify whether the product you selected for export is " free to Export" or it lies under "Restricted" or "Prohibited" Categories.
- Restricted category indicates that certain approvals from concerned government department are required to export such product or only government agency can export it.
- Prohibited category indicates that such product cannot be exported.

[5] Selection of Overseas Markets

There are numerous accessible markets worldwide that seem to offer a high potential for exports, however the real questions are; how to select your market and how to target it smartly. Statistical data analysis is essential when selecting the market. You can obtain useful information from various free and paid sources. Some B2B companies are able to provide you with very specific export/import data about products similar to yours and about the most popular markets, at a price.

Sources of Market Information

- Keep informed. Read everything you can find about world trade.
- Use Internet as it is a great source of information.
- Visit www.commerce.nic.in, www.icegate.gov.in, www.cdec.gov.in or any B2B portals which provide such data.
- Collect product-wise and country-wise export data using HS Code.
- Study the EPCs Market Reports and New Letters
- Study the various research bulletins of reputed national/ international journals.
- Look at trade publications, international newspapers, news magazines, and financial reports. Who is selling what to whom?

- Read global surveys and ocean freight guidelines.
- Become familiar with the global market trend, current regulations and government promotional facilities.
- Use your personal source of information.

Table 44. Sources of market information

Government Sources	Government websites / EPCs website and newsletter
	Consulate General / Commercial Missions abroad
	Foreign Government's Trade Centers in India
	International / Regional Organizations Like WTO, SARC
Private Sources	Trade directories like SESA
	Trade and Business Associations
	Trade Journals
	B2B Portals
	Suppliers and Customers
	Consultants and Research Agencies
Primary Research	Personal Visits / Trade Fairs
	Survey and Product Reports

Study FTAs /PTAs to be more competitive

A Free Trade Agreement (FTA) and Preferential Trade Agreement (PTA, limited FTA) is usually an agreement between two or more countries where partner countries exchange trade concessions in goods and services. There are 398 FTAs/RTAs in force in the world as per WTO Reports. India too has entered into 10 FTAs (18 countries) and 6 PTAs (50 countries), 1 unilateral scheme for LDCs (49 countries), for easing exports from India, easier cheaper access to imported raw materials, fuels, intermediate and capital goods for domestic industry. India has another 17 Agreements under negotiations.(43 countries). Changes in duties affects and shape competition and business growth in very significant ways and a careful analysis and deeper understanding of the current provisions and future trends is essential in today's free market trade environment to maximise profits. Issues usually discussed under these agreements cover customs duty elimination or reduction, removal of quantitative restrictions, easing of customs procedures, improved market access, movement of people and investment treatment. Other issues include standards, rules of origin, dispute settlement, TBTs, IPR, Government procurement rules.

Table 45. Free trade agreements (FTA) and preferential trade agreements (PTA)

S. No.	Acronym	Groupings	Member Countries	
			No	Names
Free Trade Agreements (FTA)				
1	SAFTA	South Asia Free Trade Agreement	7	India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan and the Maldives
2	ISLFTA	Indo Sri Lanka FTA	2	Sri Lanka, India
3	IMCECA	Indo Malaysia CECA	2	Malaysia, India
4	ISCECA	India Singapore CECA	2	Singapore, India
5	JICEPA	Japan India CEPA	2	Japan, India
6	IKCEPA	India Korea CEPA	2	South Korea, India
Preferential Trade Agreements (PTA)				
1	APTA	Asia Pacific Trade Agreement	5	Bangladesh, China, India, Re-public of Korea, Sri Lanka.
2	GSTP	Global System of Trade Preferences	44	Algeria, Argentina, Bangladesh, Benin, Bolivia, Brazil, Cameroon, Chile, Colombia, Cuba, Democratic People's Republic of Korea, Ecuador, Egypt, Ghana, Guinea, Guyana, India, Indonesia, Iran, Iraq, Libya, Malaysia, Mexico, Morocco, Mozambique, Myanmar, Nicaragua, Nigeria, Pakistan, Peru, Philippines, Republic of Korea, Romania, Singapore, Sri Lanka, Sudan, Thailand, Trinidad and Tobago, Tunisia, Tanzania, Venezuela, Viet Nam, Yugoslavia, Zimbabwe.
3	BIMSTEC (Under negotiations)	Bangladesh, India, Myanmar, Sri Lanka, Thailand Economic Cooperation	7	Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal.
4	IBSA (Under negotiations)	India Brazil and South Africa	3	India, Brazil and South Africa.

Source: www.indiatradeportal.in

Generalized System of Preferences (GSP)

GSP is a non-contractual instrument by which industrialised (developed) countries unilaterally and based on non-reciprocal extend tariff concessions to developing countries. This includes New Zealand, Belarus, European Union, Japan, Russia, Canada, Norway, Switzerland and Bulgaria.

Key Points for Market Selection

- Know the market's requirements
- Assess your target customers
- Examine your competitors
- Be prepare to compete against lower-cost, lower-priced local companies
- Rapidly growing markets, such as China and South East Asia are better targets for your initial exports than developed European countries.
- Evaluate the markets based on the export benefits available for few countries under the FTP and various Free Trade Agreements to know comparative advantage.
- Visit www.wto.org for WTO Agreements.
- Visit www.indiatradeportal.in for FTA and PTA
- Visit www.dgft.gov.in for Export Benefits (MEIS/SEIS)
- The right selection of export market is a thoughtful exercise.

Understand every market is different and changes every few years

We have deliberately emphasised this issue as a separate topic. To disregard it is one of the most common failures in International Trade. Your products may be in high demand in one market and be absolutely unsalable in another. Packaging you have introduced for your US customers will most likely be unattractive for potential Indonesian customers. Without an understanding of market trends and demands, their nuances and uniqueness, business traditions, culture and people's mentality it will be "mission impossible" to successfully develop that market.

You also need to understand that every market changes every few years. Technology, globalisation, privatisation, lifting of trade barriers and softing of import/export regulations are major factors which affect International Trade. And while you might think that these factors are too hard to keep in mind when considering your offshore activities, they can certainly influence each market radically and you may need to adjust your marketing and export strategies according to the current situation in each market.

Be prepared to customise your products to meet customers' needs and demands

Domestic success of your products doesn't necessarily mean global success. For example, the major competitive advantage of Australian juice in Russia was the packaging - it was the only juice on the market packed in plastic bottles. However, after several months of sales it was discovered that the target audience was limited...

due to the packaging. Ninety per cent of end-users simply could not afford to buy a 2L bottle. Looking to customer's need 1L PET packaging was launched. After that the export sales increased by 80% within six months.

[6] How to find Overseas Buyers ?

Key Points

- **Create your multilingual website with product catalogue**: Having a dynamic corporate web site is a "must" for International Trade. Nine out of ten of your potential buyers will seek and learn about your company and its products through the Internet prior to actually approaching you and if they can't find or are not impressed by your web site, they may very likely choose and deal with your competitors. Provide compete and comprehensive information about your products and indicate your general terms of trade on your web site. Provide visitors with direct contact details. Introduce a facility to receive export inquiries. Develop an attractive web site which will not only represent your company and products but also save your time and money.
- **Take advantage of free advertisement on Internet**: There are numerous free online trade boards, import-export directories, forums, etc. Spend some time and post online offers on these sites. Not only will it increase your chances of being found by potential buyers but will also add value to your web site's Search Engine ranking.
- Register with various **B2B portals.**
- Visit websites of concerned **EPCs** regularly. Follow trade leads and other related information provided by EPCs.
- Participate in **international trade fairs** and **buyer seller meets.**
- Get help of your **relatives** staying abroad.
- Contact **agents** of foreign buyers in India.
- Appoint an **overseas agent** in buyer's country.
- Contact **Indian Missions** abroad.
- Contact Overseas Chambers of Commerce

[7] Export Pricing and Costing

Pricing and costing are two different things and an exporter should not confuse between the two. Price is what an exporter offer to a customer on particular products while cost is what an exporter pay for manufacturing the same product.

Export pricing is the most important factor in for promoting export and facing international trade competition. It is important for the exporter to keep the prices down keeping in mind all export benefits and expenses. However, there is no fixed

formula for export pricing. The price for the same product may vary significantly in different markets and most likely there can be several prices for the same product depending on various factors viz., marketing strategy, product uniqueness, quality, brand recognition, quantity, market demand and target customers. The price may differ from exporter to exporter depending upon whether the exporter is a merchant exporter or a manufacturer exporter or exporting through a canalising agency.

How a product is priced is crucial in getting the buyer's attention, before the buyer becomes familiar with the quality of your product, delivery and service. In competitive environment, lower price helps in maximizing sales.

The "green and clean" image of your product is a great competitive advantage. You may be surprised to hear that in International Trade the price is not really high in the decision making process. If you sell FMCG you will know that usually, packaging is the first priority followed by quality and then price.

Determining Export Pricing

Export Pricing can be determined by the following factors:

- Range of products offered.
- Prompt deliveries and continuity in supply.
- After-sales service in products like machine tools, consumer durables.
- Product differentiation and brand image.
- Frequency of purchase.
- Presumed relationship between quality and price.
- Specialty value goods and gift items.
- Credit offered.
- Preference or prejudice for products originating from a particular source.
- Aggressive marketing and sales promotion.
- Prompt acceptance and settlement of claims.
- Unique value goods and gift items.

Export Costing

Before quoting price to overseas buyer, exporter should carefully work out all expenses. Export costing is basically Cost Accountant's job. It consists of fixed cost and variable cost comprising various elements viz., cost of production or purchase price, cost of grading-packing, storage, inspection/certification charges, banking charges, commission of agent, payment terms, interest on working capital etc. Whereas cost of transportation to port/airport, main carriage charges (ship or air

cargo), cargo insurance, custom clearance etc. will depend on export destination/ market and delivery terms called INCOTERM. It is advisable to prepare an export costing sheet for each product, market and INCOTERM. It will help exporter to quote the price according to the buyer's need.

[8] INCOTERMS 2010

To avoid conflicts and difficulties, importers and exporters – or buyers and sellers – must have a common understanding of the terms and conditions under which they trade. International Commercial Terms, known as "INCOTERMS", are internationally accepted delivery terms defining the responsibilities of exporters and importers in the arrangement of shipments and the transfer of liability involved at various stages of the transaction.

Table 46. INCOTERMS 2010

Group	Term	Stand for	Mode of Transport			
			Land	Ocean	Air	Multi
E	EXW	Ex Works	√	√	√	√
F	FCA	Free Carriage	√		√	√
	FAS	Free Alongside Ship		√		
	FOB	Free On Board		√		
C	CFR	Cost and Freight		√		
	CIF	Cost Insurance and Freight		√		
	CPT	Carriage Paid to	√		√	√
	CIP	Carriage and Ins. Paid To	√		√	√
D	DAT	Delivered At Terminal	√	√	√	√
	DAP	Delivered At Place	√	√	√	√
	DDP	Delivered Duty Paid	√	√	√	√

Developed and administered by the International Chamber of Commerce in Paris (ICC), INCOTERMS are universally recognised and adhered to by the major trading nations of the world. The first version of INCOTERMS was introduced by ICC in 1936, and has been edited and updated six times since. The latest edition of which came into force on 1 January 2010, is known as INCOTERMS 2010. There are currently 11 INCOTERMS in use and they are categorised in four groups, designated by the first letter of the term (acronym), as follows:

All the current INCOTERMS are described below. However, EXW, FOB, CIF and CIP are the most frequently used in export import.

Group E - Departure

Under EXW you - the Seller - minimise the risk by only making the goods available

at your own premises.

(1) EXW – Ex Works (... named place)

EXW represents minimum involvement of seller and the maximum involvement of the buyer in the arrangement of the transportation of the goods from seller's premises (factory, warehouse etc.). When EXW is used, you should remember that the export of the goods is NOT guaranted and the buyer may, for example, keep the goods in seller's country and/or re-sell it to a third party.

Group F - Main Carriage Not Paid By Seller

Under F Terms you - the Seller - arrange and pay only for the pre-carriage in the country of export and not for main carriage.

(2) FCA - Free Carrier (...named place)

FCA requires seller to take responsibility for all risks and costs until the goods are delivered to the named place and collected by the carrier nominated by the buyer. Under FCA seller is responsible for the export customs clearance. The carrier may be responsible for collecting the goods from seller's premises or seller may be responsible for delivering the goods to the carrier, dependent on the agreed conditions. The buyer is responsible for loading the goods.

(3) FAS - Free Alongside Ship (...named port of shipment)

Under FAS, seller must deliver the goods to the named port and place them alongside the ship. Seller is responsible for the export customs clearance and the buyer - for loading the goods onto the vessel.

(4) FOB - Free On Board (...named port of shipment)

FOB is one of the most common terms used in international trade. Under FOB seller is responsible for delivering goods to the named port, export customs clearance and loading them onto the vessel. If during the loading onto the ship, the goods would fall on the wharf or into the water, you seller is responsible for losses, but if the goods fall on the deck of the ship, the losses are the buyer's responsibility.

When the F Terms are used, you should remember that:

- FAS and FOB are mono-modal terms and can only be used when the main carriage is by sea freight.
- Under FOB you are responsible for handling, loading, stowage and other port charges, while under FCA, these charges are for the buyer's account.

Group C - Main Carriage Paid By Seller

Under C Terms, the Seller arranges and pays for the main carriage but without assuming the risk of the main carriage.

(5) CFR - Cost and Freight (...named port of destination)

Under CFR, seller is responsible for export customs clearance, delivering the goods to the named port of destination and unloading the goods from the ship, including all port charges.

(6) CIF - Cost, Insurance and Freight (...named port of destination)

CIF is very similar to CFR with the addition of insurance to seller's responsibilities.

(7) CPT - Carriage Paid To (...named place of destination)

Under CPT, seller is responsible to deliver the goods to any place nominated by the buyer in the country of destination. Although seller is responsible for inland freight in the buyer's country, the buyer is responsible for the import customs clearance and all duties, taxes and other costs in the country of destination.

(8) CIP - Carriage and Insurance Paid to (...named place of destination)

CIP is very similar to CPT with the addition of insurance to your responsibilities.

When the C Terms are used, you should remember that:

- CFR and CIF are mono-modal terms and can only be used when the main carriage is by sea freight. It is a common mistake when, under these terms, the place located in a middle of continent is named as a port of destination. Terms "CFR Vienna" and/or "CIF Moscow" are incorrect terms.
- CIF and CIP are the only two terms, under which you are compulsorily responsible for insurance. Under all other terms, the buyer considers insurance as an optional responsibility.
- C Terms are quite different from other Incoterms. They are the only terms when the point of transferring costs responsibilities and the point of transferring risks are segregated. In other words, although you are responsible for costs until the goods arrive to the named port or place of destination, the risks shift to the buyer at the port of loading or even earlier, when the goods are delivered to the carrier. If it was agreed that the carrier is collecting the goods from your premises then the risks transfer to the buyer at that point.
- From these perspectives, the C Terms are much more beneficial for you than for your buyer, as you select the carrier and control the costs and timing of the main carriage without undertaking any risks, while the buyer takes all risks for a period of main carriage during which he/she has no means of controlling or limiting those risks.

Group D – Arrival

Under D Terms, the Seller's cost/risk is maximised because he/she must take the goods available upon arrival at the agreed destination.

(9) DAT - Delivered At Terminal (...named port)

Under DAT, seller bears cost, risk and responsibility until goods are unloaded (delivered) at named quay, warehouse, yard, or terminal at destination. Demurrage or detention charges may apply to seller. Seller clears goods for export, not import.

(10) DAP - Delivered At Place (...named place)

Under DAP, seller bears cost, risk and responsibility for goods until made available to buyer at named place of destination. Seller clears goods for export, not import.

(11) DDP - Delivered Duty Paid (...named place of destination)

Under DDP seller is responsible for all costs and risks involved in delivering the goods to a named place of destination, import customs clearance and other payments of domestic duties in the buyer's country. Buyer is responsible for unloading only. Literally, seller provides "door-to-door" delivery and bears the entire risk of loss until goods are delivered to the buyer's premises.

Sr No	INCOTERMS 2010	Responsibility in Export Contract								
		In Seller's Country					In Buyer's Country			
										
		Transport to Port	Custom Clearance	Loading and Terminal Handling	Freight of Main Carriage	Marine Insurance	Unloading and Terminal Handling	Custom Clearance	Transport to buyer's premise	Miscellaneous expenses
1	**EXW** Ex Works									
2	**FCA** Free Carriage									
3	**FAS** Free Alongside Ship									
4	**FOB** Free On Board									
5	**CFR** Cost and Freight									
6	**CIF** Cost Ins. and Freight									
7	**CPT** Carriage Paid to									
8	**CIP** Carriage and Ins. Paid To									
9	**DAT** Delivered At Terminal									
10	**DAP** Delivered At Place									
11	**DDP** Delivered Duty Paid									

Seller's Responsibility Buyer's Responsibility

Figure 5. INCOTERMS 2010 and distribution of responsibility in transportation of goods

[9] Payment Terms

You have made an outstanding deal, but if you haven't been paid – you have lost. That's why setting up the right terms of trade (payment term) is a crucial part of your exports. When negotiating the terms of payment you always face a dilemma:

- If you insist on more secured payment terms, you may very well reduce your sales opportunities
- If you agree on more flexible payment terms, you run a high risk of the payment being delayed or refused.

So, appropriate selection of payment terms is must which can significantly minimise risks and have no adverse effect on sales.

Various payment terms used in export contracts are as under.

1) Advance Payment
2) Letter of Credit (LC)
3) Documentary Collection (Draft)
   a. Sight Draft (Documents against Payment - DP)
   b. Time Draft (Documents against Acceptance -DA)
4) Open or Ongoing Account
5) Consignment Sale
6) Mixed Payments
7) Counter Trade / Counter Purchase

Cash in Advance

If your buyer is prepared to pay you in advance – you are lucky – you have the money and you still have total control of your goods - you risk nothing at all. However, unless you are a well-known company with established brands, buyers will not accept these terms, at least not for a new transaction. They would have the same doubts as you do – will I get my goods after I have paid?

Don't press your buyer for cash in advance, unless you know that you might experience difficulties in selling the goods to another customer if the deal is cancelled. If your goods are non-standard or goods you are selling need to be specifically customized, the best way to secure the payment is to have money in your bank account prior to commencing customisation.

Letter of Credit (LC)

An Exporter if dealing with an unknown customer at the other end may not have any prior exposure to the credit worthiness of the Customer and would normally insist on Confirmed Letter of Credit to be opened by the Customer before shipping the goods. In case of high value transactions with known customers too; exporters prefer to get paid through Letter of Credit.

Documentary Collection (Bill of Exchange / Draft)

When there has been sufficient relation between an Exporter and the Customer (Importer) and the customer's credit worthiness is known through previous records, the Exporter might decide to extend credit and accept payment on bill of exchange basis. This system is also called as Documentary Drafts.

Documentary Collection or Draft is the term when you ship the goods before the payment is made and then draw a draft on the buyer, not on the bank, like under L/C. Under documentary collections banks have no responsibility for the payment.

There are two types of documentary collections - sight draft, also know as "Documents Against Payment", and time draft, also known as "Documents Against Acceptance".

Sight Draft (Documents against Payment - DP)

"Sight draft" is payable by the buyer immediately after notification by the buyer's bank of the receipt of the draft and transport documents.

Under this method of payment you (the Drawer) negotiate the terms with the buyer (the Drawee), specify the documents required for the payment, ship the goods and draw the draft on the buyer. The draft and the documents required for the payment are presented to your bank (Remitting Bank) and after examination are forwarded to the buyer's bank (Presenting Bank). The Presenting Bank holds the title documents (usually the transport documents) and will release them to the buyer only after the payment was made. Sight draft procedure is shown in Fig 6.

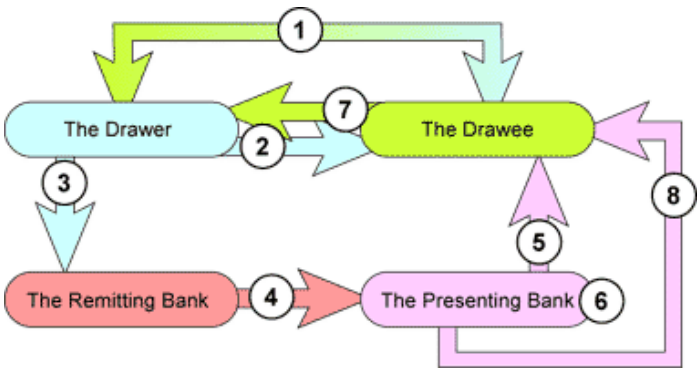


Figure 6. Process of payment under Sight Draft

1. The Drawer and the Drawee negotiate terms and conditions of the transaction
2. The Drawer ships the goods
3. The Drawer draws a draft and presents it to the Remitting Bank along with other documents
4. The Remitting Bank examines the documents and the draft and forwards them to the Presenting Bank
5. The Presenting Bank notifies the Drawee of receipt of the documents
6. The Presenting Bank holds the documents until the payment is made by the

Drawee

7. The Drawee examines the documents and makes the payment for the supplied goods
8. The Presenting Bank releases the documents to the Drawee

Sight drafts have some similarity with L/C. You deal with documents and through banks, and the buyer cannot take the possession of the goods before the payment is occurred.

However, the payment is not guaranteed. If the buyer for any reason refuses to pay, you have to deal with goods "on the water" or stacked in the customs zone in a foreign country. It can be very costly to ship your goods back or to sell them urgently. In both cases, there are substantial additional expenses (warehousing, cost of transportation to a new destination, significant discount, etc.). In some cases, the buyer who failed to pay was one of the bidders at the resulting auction and had bought the goods for a fraction of the initial price.

It is also possible, that the buyer will delay the payment. Although legally the payment has to be made immediately upon receipt of the draft by the buyer's bank, the buyer may hold the payment until the goods are delivered.

Time Draft (Documents against Acceptance - DA)

Unlike the sight draft, when dealing with time drafts, the buyer may take possession of the goods before the payment. Under the time draft, you agree on a deferring period, ship the goods and draw a draft. For the title documents to be released, the buyer has to accept the draft by issuing written evidence of his willingness to pay on the agreed maturity date (usually by signing and dating the draft).

Dealing with the 'time draft', always draw a draft against the certain date specified in the other document. (For example, "Payable at 60 days after invoice date/bill of lading date/the draft date")

The time draft, in fact, is very similar to "open account" terms – you have no control over the goods, nor over the payment. The only difference is that, in addition to the contract of sale, you have the buyer's written guarantee to make a payment on a certain date. You have to rely on the buyer. The consequences of the refusal to pay are the same as the consequences of the refusal to pay under "open account" (see below).

Drafts are normally issued in a set of two (First of Exchange and Second of Exchange) or singly (Sola Bill of Exchange). Two drafts are usually drawn to ensure that at least one draft reaches the Drawee when they are dispatched separately. When two drafts are issued they may be numbered "1" and "2" and marked "First of Exchange (Second Unpaid)" and "Second of Exchange (First Unpaid)".

Documentary collection is cheaper then L/C but the risk involved is much greater, especially with the time draft. This term is normally not recommend, unless you are

dealing with a well-known trusted buyer or the transaction is insured.

Open or Ongoing Account

When there is a huge volume of continuous business transactions between the Exporter and Importer and exports continue to happen on ongoing basis, the Exporter can simply export on the basis of a purchase order and expect the Importer to pay promptly on due date. This is the usual method adopted by most of the Multi National Companies as well as the large organizations that have sufficient import volumes spread across various countries and are dealing with multiple vendors on ongoing basis. In such cases they just determine the annual volumes to be supplied by each vendor, issue an open purchase order and keep reviewing only the delivery schedule. They offer standard payment commitment on a particular date to all vendors as a global policy. The payment process will be set and determined as a part of their business agreement.

Consignment Sale

An exporter might sign up a contractor with a distributor overseas to import, hold stock and sell the goods on his behalf. In such a situation, the distributor may not own the stocks and the ownership might continue to lie with the exporter. The distributor would only be an intermediary to sell the stocks and repatriate the money realized back to the exporter and get remunerated in terms of service charges or commission. In such cases there may be a business agreement in place but no fixed payment mechanism may be adopted.

Open Account and Consignment are the most risky payment terms – you ship the goods before the payment is made and don't have any control over the goods or over the payment. You totally rely on the buyer and if the payment has been refused, legal action is the most likely scenario. This usually involves not only significant legal fees but also your time and energy and there is no guarantee that you will recover your money.

The difference between Open Account and Consignment is that sending goods on open account you usually agree on a deferred period of time after which the buyer will pay you in total.

When dealing with the consignment, the goods are shipped but not sold. Legally, you have the title over the goods until you have been paid. Depending on the agreed terms, the buyer can pay upon the sale of all goods or make periodic payments for goods that have been sold by the end of the set period.

Mixed Payments

Quite often you can compromise with the buyer by using different terms of payment for one transaction. Remember that when you insist the buyer pay in advance when the goods are required to be customised? "Cash in advance" is the least preferred term for the buyer. The solution is mixed payments. You estimate the cost involved in customisation, which has to be prepaid and the balance may be payable under

different terms, L/C, for instance.

When you experience difficulties with cash flow and do not have available funds to prepay freight and other pre-shipment expenses, you also may consider mixed payments. Using mixed payments, you can avoid losses, which occur when the buyer refuses the payment under the sight draft. If the mixed payments were negotiated, the proportion has to be clearly indicated in the contract of sale. For example, terms of payment may be 20% cash with the order and remaining 80% by irrevocable Letter of Credit confirmed by first class bank and payable at sight.

Counter Trade / Counter Purchase

In yet another case of business arrangement called counter trade, exports may be linked with return purchase of some other items from the importer or from another source in the country. The payment may also involve services other than products. This kind of trade becomes a necessity while dealing with countries that do not have sufficient foreign currency.

[10] Letter of Credit (LC)

Letter of Credit (LC) has been a cornerstone of international trade dating back to the early 1900s. It continues to play a critical role in world trade today. For any company entering the international market, LC is an important payment mechanism which helps in eliminating certain risks.

LC is a written instrument issued by a bank at the request of its customer, the Importer (Buyer), whereby the bank promises to pay the Exporter (Beneficiary) for goods or services, provided that the Exporter presents all documents called for, exactly as stipulated in the LC and meet all other terms and conditions set out in the LC. LC is also commonly referred to as Documentary Credit.

LC is the most used payment term in International Trade. LC is a perfect procedure to equally protect your interests and your buyer's interests. Using LC as a term of payment, your risk as exporter is almost nothing and at the same time it ensures the buyer that goods are shipped before the payment has occurred. However, you only will be paid if all terms stipulated in the LC are met and all documents specified in the LC strictly comply with agreed conditions and are presented in time.

For you as an exporter, LC is one of the best methods after advance mode of payment for any business transaction as buyer's bank guarantees payment to exporter through his bank on presentation of required documents as per LC.

The International Chamber of Commerce (ICC) publishes internationally agreed-upon rules, definitions and practices governing Letters of Credit, called "Uniform Customs and Practice for Documentary Credits" (UCP). The UCP facilitates standardization of LC among all banks in the world that subscribe to it. These rules are updated from time to time; the last revision became effective from January 1, 1994, and is referred to as UCP 600.

There are various types of LC which are explained as under.

Revocable LC and Irrevocable LC

A **revocable** LC may be amended or cancelled by the Issuing Bank at any moment and without prior notice to the Beneficiary. This is as simple, as that. Never accept this form of LC in your export arrangements.

An **irrevocable** LC cannot be cancelled or changed without the consent of all parties, including the Exporter. Although UCP 600 requires that LC should indicate whether it is revocable or irrevocable, it also says "in the absence of such indication, the LC shall be deemed to be irrevocable."

Confirmed LC and Unconfirmed LC

When you export to a country with economical or political instability or if you are unfamiliar with the Issuing Bank, you should require that the LC be confirmed by a first-class bank. If LC is confirmed, the confirming bank is liable for the payment.

Transferable LC

Transferable LC is a perfect financial tool for middlemen to secure their margin without involving any funds. It allows dealing with more than one beneficiary. When a transferable LC is issued in your favour, you can transfer it to your seller and use it as a payment.

LC can be transferred only if it is specially designated as "transferable". Transferable LC must correspond with the original LC with the exception of the amount of the LC, any unit price, the expiry date, the last date for presentation of documents, the period for shipment, any or all of which may be reduced or curtailed.

At sight LC and Usance / Deferred LC

"Payable at sight" means that you will be paid "immediately" (in fact, it may take up to 7 days) after presentation of the documents stipulated in the LC to the Issuing Bank or to the Confirming Bank if it was confirmed.

If deferred payment was agreed, you will be paid on the maturity date indicated in the LC after presentation of the documents stipulated in the LC to the Issuing Bank. Don't forget to specify the date from which the deferring period starts (e.g. 60/90/120 days after date of transport document).

The bill of exchange (the draft)

The bill of exchange (the draft) is an unconditional order in writing, signed and addressed by the drawer (you) to the drawee (the paying bank), requiring the drawee to pay the drawer a certain sum of money according to the terms of the LC. Under LC, always draw the draft on the bank, not on the buyer.

Advantages of LC to exporter

1) The major advantage of LC to exporter is minimizing of credit risk. In an import and export trade, the geographical distance between importer and exporter is

very far; hence ascertaining credit worthiness of buyer is a major threat. In a mode of Letter of Credit, such risk can be avoided.

2) Buyer cannot deny payment by raising dispute on quality of goods, as LC terms and conditions are based on documentation. Some of the fraudulent buyers deliberately delays or hold payments by complaining on quality of goods. In LC terms of business transactions, rejection of export payment by raising complaint on quality of goods cannot be effected.

3) LC provides a security to exporter based on which, the exporter can pre-plan his further business activities to strengthen his/her business world.

4) Any dispute in transaction can be settled easily, as LC terms and conditions are under the guidelines of uniform customs and practice of documentary credit.

5) Against a LC, an exporter can avail pre-shipment finance from banks or other financial institutions. Many banks extend financial assistance with minimum bank interest, as LC is a 'safe export order'.

6) Assurance to receive money in full and in Time.

7) Normally, under a non LC business term, the buyer may keep on changing delivery schedule as per their requirements time to time. So this change of delivery schedule at importer's interest leads exporter to rearrange his overall daily business activities.

Disadvantages of LC to Exporter

1) While accepting LC, the exporter guarantees to meet the requirements of buyer as mutually agreed as per the terms and conditions mentioned in LC. So the liability of meeting all required parameters are with exporter failing which bank may not accept documents under such transaction.

2) Bank may debit certain charges against the discrepancy of documents also if proper documentary proof has not been submitted along with other shipping documents. So, if the exporter does not follow strictly with the terms and conditions of LC with 100% compliance of documentation, the payment will not be effected by bank.

3) A best caliber of personnel is required to monitor and navigate the process of LC to provide no room for even minute discrepancy of documents.

4) In LC, the exporter receives payment after shipment. So, if any loss due to fluctuations in foreign currency needs to be beard by exporter.

Advantages of LC to buyer/Importer

1) While accepting LC, the exporter guarantees to meet the terms and conditions of LC with documentary proof. LC opening bank remits amount only after satisfaction of all terms and conditions of LC with documentary proof. This

arrangement protects importer and provides security of shipment to him and reduces the risk of non-performance by the exporter.

2) In LC, bank acts on behalf of buyer. This minimizes time of buyer.

3) Unlike other shipments, a shipment under LC is treated with most care to meet delivery schedule and other required parameters by the exporter. The buyer receives the documents promptly and quickly with complete sets. Unless meeting delivery schedule and prompt documentation, the exporter does not get his/her payment from opening bank.

4) Based on timely delivery schedule, buyer receives goods on time thereby he can execute his business plan smoothly and efficiently, in turn satisfying his/her clients promptly and effectively.

Demerits of LC to Importer

1) LC is operated on the basis of documentation and not on the basis of physical verification of goods.

2) The parties under LC do not have any right to physically verify the contents of goods. So, if the buyer needs to confirm and satisfy on the quality of goods he buys, he can appoint an inspection agency of international repute and instruct exporter to enclose certificate of such inspection by mentioning a condition in LC.

3) Once opened a confirmed and irrevocable LC, the buyer already tied up with the said business credit line and cannot change in between. Due to various reasons, especially on selling price variation, if buyer needs to stop his/her export order he/she cannot do so.

4) Compared to other payment mode of transactions, cost of operating LC procedures and formalities are more, which may be an additional expenses to an importer especially on amendment, negotiation etc.

5) Currency fluctuation is another disadvantage of LC. Normally buyer/importer places purchase orders once in a year and opens LC accordingly. The exchange rate may differ at the time of effecting payment. So, if any loss due to fluctuations in foreign currency contracted under letter of credit, need to be beard by him.

How LC works?

There are at least four participants, when dealing with LC:

- The buyer – the Applicant
- The Exporter - the Beneficiary
- Bank, the payment will come from – the Issuing Bank
- Bank, the payment will go to – the Advising Bank.

Figure 7 shows how participants are involved in the process of payment under LC.

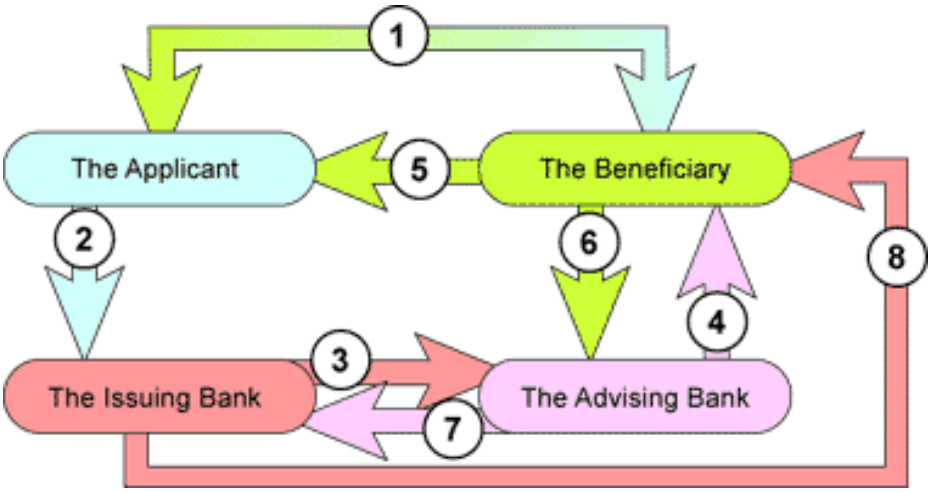


Figure 7. Process of payment under LC

1) The Applicant and the Beneficiary negotiate terms and conditions of the LC.

2) The Applicant applies to the Issuing Bank to issue the LC.

3) The Issuing Bank issues the LC and forwards it to the Advising Bank.

4) The Advising Bank checks the apparent authenticity of the LC and advises the LC to the Beneficiary.

5) The Beneficiary checks if the LC complies with the commercial agreements and if all terms and conditions specified in the LC can be satisfied.

6) The Beneficiary assembles the documents specified in the LC, checks the documents for discrepancies with the LC, draws the draft and presents.

7) The Advising Bank bears the draft and the documents against terms and conditions of the LC and forwards them to the Issuing Bank.

8) The Issuing Bank checks if the documents comply with the LC and makes a payment immediately (if the LC is available by sight) or on a certain date (if LC is available by deferred payment).

Parties, which may be involved in the LC procedure, are shown in Table 8.4.

Table 47 Various parties involved in LC procedure

Applicant	Importer/Buyer - The party that has contracted to buy goods.
Beneficiary	Exporter/Seller - The party that has contracted to sell goods.
The Issuing Bank	The Issuing Bank issues the LC on behalf of the Applicant (Buyer) and forwards it to the Advising Bank. Or it may authorise the Nominated Bank to negotiate the drafts and/or documents. Negotiation means that the nominated Bank – in this case the Negotiating Bank - gives value to such draft(s) and/or documents, not just examination of the documents.
The Nominated Bank	The Nominated Bank is the bank, which is authorized by the Issuing Bank to pay, to incur a deferred payment undertaking, to accept Draft(s) or to negotiate.
The Advising Bank	The bank to which the Issuing Bank forwards the LC with instructions to notify the Exporter (Beneficiary).The Advising Bank advises you that a LC is received and available to you and informs you about the terms and conditions of the LC. The advising bank is not responsible for the payment of the LC. The Advising Bank is not necessarily a bank where you usually banking. Try to find a bank, which has a corresponding bank in your buyer's country and can offer you a better deal in terms of charges involved in the payment under LC.
Accepting Bank	The bank named in a term (usance) LC on which drafts are drawn that has agreed to accept the draft. By accepting the draft, the Drawee Bank signifies its commitment to pay the face amount at maturity to anyone who presents it at maturity. After accepting the draft, the Drawee Bank becomes the Accepting Bank.
"available with" Bank	The bank authorized in the LC to effect payment under, accept or negotiate the LC.
Confirming Bank	The bank which, at the request of the Issuing Bank, adds its confirmation to LC. In doing so, the Confirming Bank undertakes to make payment to the Exporter upon presentation of documents under the LC.
Drawee Bank	The bank named in the LC on which the drafts are to be drawn.
Reimbursing Bank	The bank designated in the LC to reimburse the "available with" Bank which submits payment claims under the LC.
Transferring Bank	The bank authorized by the Issuing Bank to transfer all or part of the LC to another party at the Beneficiary's request.

Confirmation of LC

The confirmation of the LC by another bank - the Confirming Bank - means that if the Issuing Bank refuses to make the payment, the Confirming Bank is responsible for this payment.

If you are dealing with a buyer from a country with an unstable political or economical situation, always ask for the confirmation of the LC.

There are additional charges for the confirmation of the LC, which depend on the risk involved in dealing with the particular country. The responsibility to pay for the confirmation is negotiable and usually is paid by the buyer. However, if it was not agreed prior to the issuance of the LC, you are the one who will pay for this service.

[11] How to get Export Order?

After getting a list of potential buyers, how to get export orders from them is the most difficult task which requires lot of efforts and passions.

Develop an export plan for each market

Your export plan should focus on the following tasks:

- Market Research
- Product Development
- Trade Regulations and Barrier Assessments
- Export Strategy
- Export Pricing
- Terms of trade and payments
- Logistics and distribution
- Financing
- After-sale strategy

Sending Samples

After getting genuine inquiry from any probable buyer, provide him customized samples which will help in getting export orders.

Some useful Tips for finding and Retaining Overseas Buyers

- Do your products require to be certified? Talk to your industry association; export authority or certification company representative and build a personal relationship.
- You will likely need insurance cover. Most major insurance companies deal through agents. Find an insurance broker, who deals with a reliable marine insurance underwriter, in your hometown and build a personal relationship.
- A responsible freight forwarder is a key player in your exports, find these under Export Services. Pay a lot of careful attention to select a shipper for your goods and again build a personal relationship.

- When You Export - Market From Strength.
- Develop "Export Inquiries Handling Rules".
- Respond in 48 hours, even better 24 hours
- Learn about cultural differences. You may offend your potential buyers if you fail to learn and understand cultural differences especially in the Middle East and Asia. For example, you should not ask about your host's wife if you have been invited to visit your counterpart's home in the Middle East. In Asia, if you are invited to a business lunch you should be prepared for a 1-2 hours conversation which has nothing to do with your prospective deal. You will be asked about your family, childhood, hobbies, favourite food, etc. and you should respond accordingly and ask similar questions. Asian people want to know whom they are dealing with before any business discussion begins.
- All verbal agreements must be confirmed in writing. This is one of the "golden rules" for your export operations.
- Be aware of frauds. There are people in international trade that are making a good living from fraudulent practices. The most known schemes are non-payment, sample scams and false complaints.
- False complaints about products or services are quite common and often hard to recognise as scams. The best way to protect your company against this problem is to include a very detailed "complaints reporting clause" in the contract.
- Be market and customer focused.
- Build a strong business relationship. Do not ignore small issues in building business relationships; it's the little things that make the difference. If you send SMS or e-mail on major events and national holydays and on key personnel birthdays, it will add considerable value and strength to the relationship.
- Win buyers through better service.
- Remember that the key attributes of every service are:
  - Speed
  - Sincerity
  - Knowledge and
  - Problem solving
- Win and keep buyers through exceeding expectations. Philip Kotler, the author of several well-known marketing books said: "Meeting customer expectations will only satisfy customers; exceeding their expectation will delight them". This is true. However, the pitfall is, that the better you act, the higher the expectations your customer will expect and one day you find that the task of exceeding the expectations will be too difficult and too costly. You should decide where to draw the line between exceeding the expectation and making a profit.

- Be prepared to meet growing demand. If you can't meet the demand you risk losing the whole market and your reputation. People are not interested in dealing with you if there is no future growth. Be ready to increase production, form alliances or source similar products elsewhere. But be sure they match your quality, service, prices and if possible branding.
- Be prepared to spend time and money**.** Generally, investments that you will need to make in international markets are greater than domestic investments. Exploring and researching foreign markets can take longer and cost more than expected. However the rewards are equally greater.
- Don't try too much at the beginning and don't grow too fast. Concentrate and succeed in one market at a time, moving to the next only after securing market share in the first. Be patient, wait until cash flow is strong enough to justify your expansion.

  If you carefully consider and take into account all the above issues then it is most likely that your products will be successful internationally and the demand for them will be grow significantly.

Preparing Proforma Invoice

Prepare and send Proforma Invoice to buyer indicating all details *viz.,* product specification, quantity, packing, price, delivery term, payment term, etc. to get confirmed order.

All international transactions are conducted according to the terms and conditions negotiated between you and your buyer. By negotiating terms you secure the deal, minimize risks and protect your company in case of possible trade disputes, claims and/or legal actions. Usually terms of trade are stipulated in the trade contract and clearly indicate your and the buyer's responsibilities.

In order to be effective and to promote certainty in your business relationship with your buyer, it is a good idea to provide for the following details of your deal in any trade contract:

- Date of Contract
- Seller's and Buyer's Names
- Product Name
- Product Description
- Packing
- Quantity
- Unit Price
- Terms of Delivery (Incoterms)
- Terms of Payment
- Delivery Date
- Validity

The contract should be signed by all parties directly involved in the contract. For example, if some responsibilities under the contract fall to a middleman, agent or other third party, this party should sign the contract together with you and the buyer.

The quote, which is written on the company letterhead and encloses all the above terms would generally become binding on you if it was accepted by the buyer in writing or simply marked "Accepted", signed and forwarded back to you.

You have to be very accurate when issuing a quotation and you should always include a "Validity" condition. For example, "This quotation is valid for a period of XX days from the above date".

Typographic errors and omissions of words may occur in the preparation of quotation. In practice, most buyers will unconditionally accept a revision in the event of an error and omission in the quotation. However, some buyers would take the error as is, if it is to their advantage and would force you to negotiate a more favourable price and/or conditions.

As a precautionary measure, it is worthwhile adding the acronym E.&O.E. stated for "Errors and Omissions Excepted" to your quotations to disclaim final responsibility for typographical errors and unintentional omissions.

Essential Terms

Seller's and Buyer's Names- Always stipulate the full legal name of your company. Also, you are required under the Corporations Act to quote your ACN or ABN on all documents. Check the name of your buyer's company, especially when dealing with a foreign company for the first time.

Unit Price - Price stipulated in the contract must cover all expenses and risks as well as allow for the profit. At the end of the day, you are trading to earn some money.

Terms of Delivery (Incoterms) - Terms of Delivery must indicate the point of destination and should refer to the Incoterms. For example, "CIF Hamburg Incoterms 2010".

Payment Terms - It is important to specify the terms of payment and payment procedure in detail as well as to stipulate all documents necessary to be presented for the payment to occur. Commonly, these details are specified in the appendix or supplement to the contract. In this case, under Payment Terms you should include, for example, "Irrevocable Confirmed Letter of Credit at sight in accordance with Supplement No. 1 hereto which is an integral part of the present contract".

Delivery Date - Indicate the delivery time as a reference to a certain date stipulated in the contract. It may be the date of the contract, but more appropriate the date of the receipt of the confirmation of the letter of credit. For example, "the goods must be delivered no later than X days after the date of the receipt of the confirmation of the letter of credit by the Seller."

You should check the shipment frequency with the shipping company or with your freight forwarder before negotiating the delivery date and allow for possible delays. Usually major shipping lines would have shipments to most destinations occurring weekly.

Additional Terms - The terms and conditions specified below are not necessary to enclose in a contract, but are very important to avoid uncertainties and minimise your risks.

Claims clause - Claims are common in International Trade. In fact, there are people who make a living out of claims and you have to be aware of that. By including a claim clause in the contract, you may be able to avoid costly litigation in the event of a dispute.

Arbitration Clause - Trade disputes and claims may be settled in different manners. It is better to settle a claim amicably by negotiations outside arbitration or a court. The ICC International Court of Arbitration recommends that all parties wishing to have recourse to ICC arbitration include the following standard clause in their contracts:

"All disputes arising out of or in connection with the present contract shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules in the International Court of Arbitration in Paris." Also you may add "The decision made by the Court of Arbitration is final and binding upon all Parties."

Force Majeure Clause - Force Majeure literally means "greater force". "Force Majeure" clauses excuse you or the buyer from performing the contract obligations if the failure is caused by conditions beyond your or the buyer's control. Example "Force Majeure" Clause is as under.

Neither Party shall be liable or responsible for any failure or delay in performance under the present Contract if such failure or delay is caused by Act of God, Government restrictions (including the denial or cancellation of any export or other necessary license), riots, civil commotions, wars, insurrections and/or any other cause beyond the reasonable control of the Party whose performance is affected.

Negotiations

Negotiating is an art. Your buyers will be pleased if they manage to negotiate any discounts from you. Don't disappoint them. Include at least 10% in your export prices for negotiating. By discounting the price you will be able to gain better trade terms. However, you have to be careful with allowances. If the price is too high to begin with you may not get the buyer to even commence negotiations.

A reasonable discount in price may be considered after determining the buyer's interest in the product, future prospects and continuity in business. Learn to recognise "genuine" inquiries and beware of "dream" orders.

As a rule, a "genuine" inquiry has a brief introduction, is fairly specific in what it is looking for and will have a company name, contact name and contact details. If you clearly understand that an inquiry you receive isn't worth an answer, just ignore it.

Confirmation of order

On receiving an export order, it should be examined carefully in respect of items, specification, payment conditions, packaging, delivery schedule, etc. and then the order should be confirmed. Accordingly, the exporter may enter into a formal contract with the overseas buyer.

[12] Export Credit Insurance from ECGC

International trade involves payment risks due to buyer/country insolvency. These risks can be covered through ECGC Limited. The credit insurance enables you to expand your exports without fear of loss. You should try to insure payments under documentary collections, consignment and open account terms. You may even consider the insurance of the unconfirmed LC.

The export credit insurance, issued by ECGC in your favour, protects you against non-payments by the buyer or by the Issuing Bank (in case of insuring an unconfirmed LC) due to commercial (insolvency, fraud) or political risk. In case of non-payment, you will usually receive 80-90% of the invoice. The insured payment allows you to obtain export finance from a bank.

ECGC Limited (formerly Export Credit Guarantee Corporation of India Ltd) is a Government of India Enterprise which provides export credit insurance facilities to exporters and banks in India. It functions under the administrative control of Ministry of Commerce and Industry, and is managed by a Board of Directors comprising representatives of the Government, Reserve Bank of India, banking, insurance and exporting community. Over the years, it has evolved various export credit risk insurance products to suit the requirements of Indian exporters and commercial banks. ECGC is the seventh largest credit insurer of the world in terms of coverage of national exports.

ECGC is essentially an export promotion organization, seeking to improve the competitive capacity of Indian exporters by giving them credit insurance covers comparable to those available to their competitors from most other countries. It keeps it's premium rates at the lowest level possible.

How does ECGC help exporters?

- Offers insurance protection to exporters against payment risks
- Provides guidance in export-related activities
- Makes available information on different countries with it's own credit ratings
- Makes it easy to obtain export finance from banks/financial institutions
- Assists exporters in recovering bad debts
- Provides information on credit-worthiness of overseas buyers

Need for export credit insurance

Payments for exports are open to risks even at the best of times. The risks have assumed large proportions today due to the far-reaching political and economic changes that are sweeping the world. An outbreak of war or civil war may block or delay payment for goods exported. A coup or an insurrection may also bring about the same result. Economic difficulties or balance of payment problems may lead a country to impose restrictions on either import of certain goods or on transfer of payments for goods imported. In addition, the exporters have to face commercial risks of insolvency or protracted default of buyers. The commercial risks of a foreign buyer going bankrupt or losing his/her capacity to pay are aggravated due to the political and economic uncertainties. Export credit insurance is designed to protect exporters from the consequences of the payment risks, both political and commercial, and to enable them to expand their overseas business without fear of loss.

The risks covered under the Standard Policy

Following risks are covered under Standard Policy from the date of shipment :

(a) Commercial Risks

i. Risks covered on the overseas buyers:

- Insolvency of the buyer
- Failure of the buyer to make the payment due within a specified period, normally four months from the due date
- Buyer's failure to accept the goods, subject to certain conditions

ii. Risks covered on the LC opening Bank:

- Insolvency of the LC opening bank
- Failure of the LC opening bank to make the payment due within a specified period normally four months from the due date

(b) Political Risks

- Imposition of restriction by the Government of the buyer's country or any Government action, which may block or delay the transfer of payment made by the buyer
- War, civil war, revolution or civil disturbances in the buyer's country. New import restrictions or cancellation of a valid import license in the buyer's country
- Interruption or diversion of voyage outside India resulting in payment of additional freight or insurance charges which cannot be recovered from the buyer
- Any other cause of loss occurring outside India not normally insured by general insurers, and beyond the control of both the exporter and the buyer

Small Exporters Policy - (SEP)

The Small Exporter's Policy is basically the Standard Policy, incorporating certain improvements in terms of cover, in order to encourage small exporters to obtain and operate the policy. It is issued to exporters whose anticipated export turnover for the period of one year does not exceed Rs 5 crore. The Maximum Liability under the SEP shall be fixed as per laid down guidelines, but shall not exceed Rs 2 crore. The nature of commercial risks and political risks cover is similar to that of the Shipment Comprehensive Risk (SCR) or Standard policy.

Period of Policy: 12 months

Minimum premium: Premium payable will be determined on the basis of projected exports on an annual basis subject to a minimum premium of Rs 5000/- for the policy period and is non-refundable. No claim bonus in the premium rate is granted every year at the rate of 5%.

Shipments Comprehensive Risks Policy - (SCR)

An exporter whose annual export turnover is more than Rs 5 crore is eligible for this Policy. This is a Standard Whole Turnover Policy wherein all shipments are required to be covered under the Policy.

Period of Policy: 12 Months

Minimum Premium: Rs 10,000/- shall be adjusted towards premiums falling due on the shipments effected under the policy and is non-refundable.

How Comprehensive policy Works?

For example, you are an exporter, you obtained an order from XYZ - an overseas buyer to ship them goods for 6 months for USD 6000 (us dollars six thousand). The buyer instructed you to ship goods worth USD 1000 (one thousand) per shipment, each month. Means, you ship six times in each month for USD 1000 per shipment and total of USD 6000 for six months. As per the agreed terms by you and your buyer, credit period you have allowed is 60 days D.A.P (DA). Means, 60 days from the date of particular shipment, your buyer has to pay the amount of USD 1000 to you. Again in next month the buyer has to pay USD 1000 against the second shipment you have shipped to your buyer.

This process continues till the 6th shipment effect. You approaches ECGC and apply with your buyer's (xyz) complete details and their bank address. Based on the available data and market research, ECGC approves a credit limit of USD 2000 against the particular buyer – XYZ. This means, the total outstanding liability of existing buyer (XYZ) should not exceed the limit of USD 2000 at any point of time.

Important Obligations of the Exporter

- Obtaining valid credit limit approval on buyers and banks from ECGC.
- Premium is payable in advance as per IRDA regulations and sufficient premium deposit is also to be maintained in advance based on your turnover projection at

all times during the policy.

- Submission of Monthly declaration of shipments by 15th of the subsequent month.
- Notifying/Declaration of payments for bills that have remained unpaid beyond 30 days from its due date of payment, by the 15th of the subsequent month.
- Filing of claim within 360 days from the due date of the export bill or 540 days from expiry date of the Policy Cover whichever is earlier.
- Initiating recovery steps including legal action.
- Sharing of recovery.

Highlights

- Higher percentage of cover
- Competitive premium rate.
- No Claim Bonus (NCB) of 5% subject to no claim, upto a maximum of 50%.
- Availability of Discretionary Limits on buyers on conditions.

[13] Export Finance

Finance is a life and blood of any business whether it is domestic or international. It is more important in case of export as there could be considerable lag in receiving the export order and final payment from the overseas buyer. To promote export, most countries have specific financial institutions to provide credit to their exporters. The export credit is broadly classified as pre shipment and post shipment finance.

Pre shipment Finance

Pre shipment finance, also called packing credit, is the working capital financed by commercial banks prior to the shipment of goods. This allows the exporter to meet various operational expenses incurred before the goods are ready for shipment.

Purpose

- Purchase raw materials and other inputs for manufacturing
- Import materials from domestic markets to produce goods for export
- Assemble goods
- Store goods at a suitable warehouse facility until shipment
- Pack and label goods
- Pay for documentation
- Pay for pre-shipment inspection charges

Basis of Finance

Pre shipment credit is only issued to that exporter who has the export order in his own name. However, as an exception, financial institution can also grant credit to

a third party manufacturer or supplier of goods who does not have export orders in their own name. It is extended in the forms of Indian Rupee as well as in foreign currency.

Eligibility/Documents

- Exporter should have IEC No.
- Exporter should not be in the caution list of RBI.
- Confirmed export order or irrevocable LC or original cable / fax / telex message exchange between the exporter and the buyer revealing the information about the full name and address of the overseas buyer, description quantity and value of goods (FOB or CIF), destination port and the last date of payment.
- Formal application for release the packing credit with undertaking to the effect that the exporter would be ship the goods within stipulated due date and submit the relevant shipping documents to the banks within prescribed time limit.
- Licence issued by DGFT if the goods to be exported fall under the restricted or canalized category. If the item falls under quota system, proper quota allotment proof needs to be submitted.

Quantum of Finance

The quantum of finance is fixed depending on the FOB value of contract/LC or the domestic values of goods, whichever is found to be lower. Normally insurance and freight charged are considered at a later stage, when the goods are ready to be shipped.

The only guideline principle is the concept of Need Based Finance. Banks determine the percentage of margin, depending on factors such as the nature of order, the nature of the commodity and capability of exporter to bring in the requisite contribution.

In this case disbursals are made only in stages and if possible not in cash. The payments are made directly to the supplier by drafts/bankers/cheques. The bank decides the duration of packing credit depending upon the time required by the exporter for processing of goods.

Duration

The maximum duration of packing credit period is 180 days, however bank may provide a further 90 days extension on its own discretion, without referring to RBI.

Post Shipment Finance

Post Shipment Finance is a kind of loan provided by a financial institution to an exporter or seller against a shipment that has already been made. It is meant to finance export sales receivable after the date of shipment of goods to the date of realization of exports proceeds. In cases of deemed exports, it is extended to finance receivable against supplies made to designated agencies. Exporters don't wait for the importer to deposit the funds.

Purpose

- Pay for distributors and agency services
- Conduct promotional activities in the overseas market
- Pay port authorities, customs and shipping agents
- Pay export tax and duty, freight and other expenses
- Pay ECGC and marine insurance premium
- Meet after-sales service expenses
- Pay for expenses in relation to exhibitions and trade fairs within the country

Basis of Finance

Post shipment finance is provided against evidence of shipment of goods or supplies made to the importer or seller or any other designated agency.

Types of Finance

Post shipment finance can be secured or unsecured. Since the finance is extended against evidence of export shipment and bank obtains the documents of title of goods, the finance is normally self liquidating. In that case it involves advance against undrawn balance, and is usually unsecured in nature. Further, the finance is mostly a funded advance. In few cases, such as financing of project exports, the issue of guarantee (retention money guarantees) is involved and the financing is not funded in nature.

Quantum of Finance

Post shipment finance can be extended up to 100% of the invoice value of goods. Banks can also finance undrawn balance. In such cases banks are free to stipulate margin requirements as per their usual lending norm.

Duration

Post shipment finance can be of short terms or long term, depending on the payment terms offered by the exporter to the overseas importer. In case of cash exports, the maximum period allowed for realization of exports proceeds is six months from the date of shipment. Concessive rate of interest is available for a highest period of 180 days, opening from the date of surrender of documents. Usually, the documents need to be submitted within 21days from the date of shipment.

[14] Procurement and Packing of Goods

Once you are ready with the infrastructure for exporting goods and have obtained necessary finance, you should proceed to procure the goods for export. Procuring the goods should be done with extreme care and caution as to the quality and cost. However, procuring the raw materials etc. and manufacturing the goods for export will need extra efforts on your part. If you are an established exporter, you can have the facility of procuring raw materials under the Duty Exemption Scheme.

An important stage after manufacturing of goods or their procurement is their

preparation for shipment. This involves labeling, packaging, packing and marking of export consignments. Packing should be of international standards. Good packaging delivers and presents the goods in top condition and in attractive way. It helps easy handling, maximum loading, reducing shipping costs and to ensuring safety and standard of the cargo. Proper packaging and labelling not only makes the final product look attractive but also save a huge amount of money by saving the product from wrong handling the export process.

The export goods should be labeled, packaged and packed strictly as per the buyer's specific instructions.

Packaging

The primary role of packaging is to contain, protect and preserve a product as well as aid in its handling and final presentation. Packaging fulfils a vital role in helping to get the export products to the market in top condition, as well as in presenting your goods to the overseas buyer in an attractive way. While packaging, quality should not be compromised merely to cut down costs, packaging should also be in conformity with the instructions issued by the importer.

Packaging also refers to the process of design, evaluation, and production of packages. The packaging can be done within the export company or the job can be assigned to an outside packaging company.

Packaging provides following benefits to the goods to be exported:

- **Physical Protection** – Packaging provides protection against shock, vibration, temperature, moisture and dust.
- **Containment or agglomeration** – Packaging provides agglomeration of small objects into one package for reason of efficiency and cost factor. For example it is better to put 1000 pencils in one box rather than putting each pencil in separate 1000 boxes.
- **Marketing**: Proper and attractive packaging play an important role in encouraging a potential buyer.
- **Convenience** - Packages add convenience in distribution, handling, display, sale, opening, use, and reuse.
- **Security** - Packaging can play an important role in reducing the security risks of shipment. It also provides authentication seals to indicate that the package and contents are not counterfeit. Packages also can include anti-theft devices, such as dye-packs, RFID tags, or electronic article surveillance tags, that can be activated or detected by devices at exit points and require specialized tools to deactivate. Using packaging in this way is a means of loss prevention.

Packing

Packing refers to the external containers used for transportation. The shape of packing cases play a very important role in packing the cargo, and the nature of packing

material to be used will depend upon the items exported As regard specification for the size, weight and strength care must be taken to ensure that the weight of standard case does not exceed 50 Kg. for easy handling of the cargo. Before packing and sealing the goods, it should be ensured that all the contents are properly placed in the case and the list of contents of packing notes should be prepared so that the buyer, the Customs authorities and the Insurance authorities can easily check the contents of each and every case.

The consolidated statement of contents for a number of cases is called the Packing List, which should be prepared in the prescribed standardised format.

Marking

Marking means to mark the address, number of packages etc. on the packets. It is essential for identification purpose and should provide information on exporters' mark, port of destination, place of destination, order number and date, gross, net and tare weight and handling instructions. It should also be ensured that while putting marks, the law of buyer's country is duly compiled with.

All shipping cases should be marked a number with special symbols selected by the exporters or the importers, so that the competitors cannot find out the details of the customers and the country of destination or supplier's country of despatch. Care should also be taken to ensure that the marking conforms to those written in the invoice, insurance certificate, bill of lading and other documents. The International Cargo Handling Co-ordination, Association has set out for the use of exporters a number of recommendations for the marking of goods carried by ocean-going vessels. They are equally useful for sending goods by other modes of transportation.

The marks should appear in certain order. Essential data should be placed in oblong frames with lines 1.5 cm thick and subsidiary information should be placed in another type of frame. Declaration on large packages should be placed on two continuous sides, and for consignments bound together on a pallet, also on the top. Handling instructions should be placed on all four sides. Similar packages, such as goods in sacks, should be marked on two opposite sides.

Labelling

Labelling requirements differ from country to country and the same should be ascertained well in advance from the buyer. The label should indicate quality, quantity, method of use etc. Special international care labels have been specified for the textile items by GINITEX, and the same should be scrupulously adhered to.

It is also important for an exporter to be familiar with all kinds of sign and symbols and should also maintain all the nationally and internationally standards while using these symbols. Labelling should be in English, and words indicating country of origin should be as large and as prominent as any other English wording on the package or label.

Labelling on product provides the following important information:

- Shipper's mark
- Country of origin
- Weight marking (in pounds and in kilograms)
- Number of packages and size of cases (in inches and centimeters)
- Handling marks (international pictorial symbols)
- Cautionary markings, such as "This Side Up."
- Port of entry
- Labels for hazardous materials

Labelling of a product also provides information like how to use, transport, recycle, or dispose of the package or product. Only fast dyes should be used for labeling. Essential data should be in black and subsidiary data in a less conspicuous colour; red and orange and so on. For food packed in sacks, only harmless dyes should be employed, and the dye should not come through the packing in such a way as to affect the goods.

[15] Quality Control and Pre-shipment Inspection

An important aspect about the goods to be exported is compulsory quality control and pre-shipment inspection. Under the Export (Quality Control and Inspection) Act, 1963, about 1000 commodities under the major groups of Food and Agriculture, Fishery, Minerals, Organic and Inorganic Chemicals, Rubber Products, Refractoriness, Ceramic Products, Pesticides, Light Engineering, Steel Products, Jute Products, Coir and Coir Products, Footwear and Footwear Products / Components are subject to compulsory pre-shipment inspection.

ISI Certification

Indian Standards Institute now known as Bureau of Indian Standard (BIS) is a registered society under a Government of India. BIS main functions include the development of technical standards, product quality and management system certifications and consumer affairs.

AGMARK Certification

AGMARK is an acronym for Agricultural Marketing and is used to certify the food products for quality control. AGMARK has been dominated by other quality standards including the non manufacturing standard ISO 9000.

Products having ISI Certification mark or AGMARK are not required to be inspected by any agency. These products do not fall within the purview of the export inspection agencies network. The Customs Authorities allow export of such goods even if not accompanied by any pre-shipment inspection certificate, provided they are otherwise satisfied that the goods carry ISI Certification or the AGMARK.

Benefits of ISI and AGMARK Certification

Products having ISI Certification mark or AGMARK are not required to be

inspected by any agency. These products do not fall within the purview of the export inspection agencies network. The Customs Authorities allow export of such goods even if not accompanied by any pre-shipment inspection certificate, provided they are otherwise satisfied that the goods carry ISI Certification or the AGMARK.

In-Process Quality Control (IPQC)

In-Process Quality Control (IPQC) inspection is mainly done for engineering products and is applied at the various stages of production. Units approved under IPQC system of in-process quality control may themselves issue the certificate of inspection, but only for the products for which they have been granted IPQC facilities. The final certificate of inspection on the end-products is then given without in-depth study at the shipment stage.

Self-Certification Scheme

Under the self-Certification Scheme, large exporters and manufacturers are allowed to inspect their product without involving any other party. The facility is available to manufacturers of engineering products, chemical and allied products and marine products. Self-Certification is given on the basis that the exporter himself is the best judge of the quality of his products and will not allow his reputation to be spoiled in the international market by compromising on quality. Self-Certification Scheme is granted to the exporter for the period of one year. Exporters with proven reputation can obtain the permission for self-certification by submitting an application to the Director (Inspection and Quality Control), Export Inspection Council of India, New Delhi.

ISO 9000

The discussion on inspection certificate and quality control is incomplete without ISO-9000. Established in 1987, ISO 9000 is a series of international standards that has been accepted worldwide as the norm assuring high quality of goods. The current version of ISO 9000 is ISO 9000:2000.

International Agencies

At times, foreign buyers lay down their own standards/ specifications which may or may not be in consonance with the Indian standards. They may also insist upon inspection by their own nominated agencies. These issues should be sorted out before confirmation of order.

[16] Cargo Insurance

Export and import require transportation of goods over a long distance. No matter whichever transport has been used in international trade, necessary insurance is must for ever good. Cargo insurance also known as marine cargo insurance is a type of insurance against physical damage or loss of goods during transportation. Cargo insurance is effective in all the three cases whether the goods have been transported via sea, land or air.

Insurance policy is not applicable if the goods have been found to be packaged or transported by any wrong means or methods. So, it is advisable to use a broker for placing cargo risks.

Scope of Coverage

The following can be covered for the risk of loss or damage:

- Cargo import, export cross voyage dispatched by sea, river, road, rail post, personal courier, and including associated storage risks.
- Good in transit (inland).
- Freight service liability.
- Associated stock.

However there are still a number of general exclusion such loss by delay, war risk, improper packaging and insolvency of carrier. Converse for some of these may be negotiated with the insurance company. The Institute War Clauses may also be added.

Regular exporters may negotiate open cover. It is an umbrella marine insurance policy that is activated when eligible shipments are made. Individual insurance certificates are issued after the shipment is made. Some LC will require an individual insurance policy to be issued for the shipment, While others accept an insurance certificate.

Specialist Covers

Whereas standard marine/transport cover is the answer for general cargo, some classes of business will have special requirements. General insurer may have developed specialty teams to cater for the needs of this business, and it is worth asking if this cover can be extended to export risks. Cover may be automatically available for the needs of the trade viz., project constructional works insurers can cover the movement of goods for the project, fine art, precious stones etc. Special Cover can be extended to cover sending of precious stones. Stock through put cover extended beyond the time goods are in transit until when they are used at the destination.

Seller's Buyer's Contingent Interest Insurance

An exporter selling on, for example FOB delivery terms would according to the contract and to INCOTERMS, have not responsibility for insurance once the goods have passed the ship's rail. However, for peace of mind, he may wish to purchase extra cover, which will cover him for loss or will make up cover where the other policy is too restrictive. This is known as Seller's Interest Insurance.

Similarly, cover is available to importers/buyers. Seller's Interest and Buyer's Interest covers usually extended cover to apply if the title in the goods reverts to the insured party until the goods are recovered resold or returned.

Loss of Profits/ Consequential Loss Insurance

Importers buying goods for a particular event may be interested in consequential loss cover in case the goods are late and replacements have to be found to replace them. In such cases, the insurer will pay a claim and may receive proceeds from the eventual sale of the delayed goods.

[17] Currency Risk Management

Currency risk is a type of risk in international trade that arises from the fluctuation in price of one currency against another. This is a permanent risk that will remain as long as currencies remain the medium of exchange for commercial transactions. Market fluctuations of relative currency values will continue to attract the attention of the exporter, the manufacturer, the investor, the banker, the speculator, and the policy maker alike.

While doing business in foreign currency, a contract is signed and the exporter company quotes a price for the goods using a reasonable exchange rate. However, economic events may upset even the best laid plans. Therefore, the company would ideally wish to have a strategy for dealing with exchange rate risk.

Currency Hedging

Currency hedging is technique used to avoid the risks associated with the changing value of currency while doing transactions in international trade. It is possible to take steps to hedge foreign currency risk. This may be done through one of the following options:

- Billing foreign deals in Indian Rupees: This insulates the Indian exporter from currency fluctuations. However, this may not be acceptable to the foreign buyer. Most of international trade transactions take place in one of the major foreign currencies USD, Euro, Pounds Sterling, and Yen.
- Forward contract. You agree to sell a fixed amount of foreign exchange (to convert this into your currency) at a future date, allowing for the risk that the buyer's payments are late.
- Options: You buy the right to have currency at an agreed rate within an agreed period. For example, if you expect to receive $35,000 in 3 months, time you could buy an option to convert $35,000 into your currency in 3 months. Options can be more expensive than a forward contract, but you don't need to compulsorily use your option.
- Foreign currency bank account and foreign currency borrowing: These may be suitable where you have cost in the foreign currency or in a currency whose exchange rate is related to that currency.

[18] Delivering of Goods and Freight Forwarder

There are many combinations of people and methods that you can use to deliver the goods that were ordered. For this purpose you can use services provided by the

freight forwarder.

Freight Forwarder

A freight forwarder is a person who takes care of the important steps of shipping the merchandise. This person quotes shipping rates, provides routing information, and books cargo space.

Freight forwarders prepare documentation, contract shipping insurance, route cargo with the lowest customs charges, and arrange storage. They are valuable to you as an import/export agent, and they are important in handling the steps from factory to final destination.

They can be found online or by personal referrals. Find someone who can do a good job for you. You'll need someone who you can work with, since this may become a long-term business relationship

Types of Export Containers

Different types of containers are used in domestic and international trade to move cargo from one location to another. Some types of containers are Standard Dry Containers, Open Top Containers, High cube Containers, Refrigerated Containers (Reefer Containers), GOH Containers (Garments on hanger containers), Open Side Containers, Tank Containers , Half height Containers, Ventilated Containers, Car Carrier Containers, Hard top Containers, Insulated Containers, Tunnel Containers, Platform Containers, Flat rack Containers etc. These containers are used to transport different types of goods as per convenience, coastwise and time saving parameters. For example, Standard dry containers are used to move general dry cargo, temperature sensitive cargo is moved with refrigerated containers, liquid and powder type goods are moved with tank container so on. So each type of container is manufactured as per customer's requirements.

Most of the shipping cargo container length would be 20' or 40' standard in sizes.

20' Dry Cargo Container

20' containers are commonly used by most of the traders apart from 40' containers. 20' standard dry cargo containers are manufactured with steel which is totally sealed and water proof with plywood flooring.

The dimensions	**External**	**Internal**
◆ Length	20' (6.96 m)	19' 4" (5.89 m)
◆ Width	8' (2.43 m)	7' 8.6" (2.35 m)
◆ Height	8' 6" (2.59 m)	7' 10" (2.38 m)

The recommended load volume = 1000 cft (28 cbm)

Cargo capacity = Standard : 17.8 Ton
Heavy duty : 27.0 Ton

Pay load weight: 22100 kg

40' shipping cargo dry container

The size and construction design of containers has been standardized; there can be unit variations within each size and type category and by container owner or operator. For example, two 40-foot dry cargo containers could look the same on the outside but might have different cargo handling capacity on the inside because one container was constructed for handling general cargo loaded onto pallets and the other container was constructed to handle garments on hangers so they can be easily off-loaded and placed immediately on the sales floor at your local clothing store.

The dimensions	**External**	**Internal**
◆ Length	40' (12.19 m)	39' 5" (12.02 m)
◆ Width	8' (2.43 m)	7' 8.6" (2.35 m)
◆ Height	8' 6" (2.59 m)	7' 10" (2.38 m)

The recommended load volume = 2050 cft (58 cbm)

Cargo capacity = Standard : 27.8 Ton

The information on measurement and weight mentioned may vary slightly from one brand owner to another. Some of the top cargo container owners are NYK, Evergreen, CMA-CGM, Maersk, MSC etc. You may reconfirm exact weight, measurement and other details from container owner or their agent.

Less Container Load (LCL) and Full Container Load (FCL)

If a shipper does not have enough goods to accommodate in a fully loaded container, he arrange with a consolidator to book his cargo. This type of shipment is called LCL shipment. The said consolidator arranges a full container (FCL) with a main shipping carrier, and consoles the shipments of other shippers. Means the freight forwarder who books a full container accepts goods from different shippers and consolidates all such goods in to one container as a Fully Loaded Container – FCL. The freight forwarder sorts out these goods at destination or at trans-shipment points, meant for different consignees at different ports.

Once after arrival of goods at destination the freight forwarder release goods meant for each consignee separately by collecting necessary charges if any.

Precautions to be taken while booking LCL

Transit Time of LCL cargo

Firstly, do not expect the cargo arrival time as faster as an FCL shipment. Because, since the cargo is a Less Container Load (LCL), the goods will be stuffed in to the container, once the freight forwarder receives enough cargo to make the container 'full' at place of receipt. Place of receipt may be near loading port or container freight station, away from loading port depends up on location of your factory where the goods to be exported are. Secondly, there may have one or more trans-shipment ports before arriving cargo at final destination. Chances are there for a delay of one or more days at trans-shipment point also. Before appointing a freight forwarder,

you need to get a clear idea about the arrival of goods at destination.

Get quote in writing

If any haulage is involved, what would be the inland haulage charges? What is the ocean freight to the port of final destination etc. Since the cargo is a Less Container Load (LCL), Freight forwarders quote the charges per cubic meter basis (CBM basis). Learn, how CBM is calculated if weight is more.

Destination Service Charges – Beware of trap behind

This is a very important tip to be strictly followed by any exporter while booking LCL shipment with a freight forwarder. Get in writing from local freight forwarder about the 'amount of charges, their counterpart at destination collects from your buyer'. This is very important because, different freight forwarders charge different amount as 'Delivery order charges' from the consignee abnormally in the field of LCL shipments. Because, with the understanding between the freight forwarders each other at load port and final destination, the quote at load port may be low, but higher at final destination as 'delivery charges'.

Role of 'Service' in LCL shipments

In a supply chain management system, 'service' plays a major role. You may have a very good relationship with your local freight forwarder. However, the same service is expected to get from all his counterparts in transit as well as at final destination. The same service is required to be delivered to your overseas buyer at destination. So before finalizing freight forwarder, you can collect the local freight forwarders counterpart office address details at final destination. Let your buyer also satisfy with 'no objection in shipping through the said forwarder'.

Survey report to reconfirm volume of goods

If you do not know the exact volume of LCL shipment which you have shipped, you can demand a copy of survey report issued by the surveyor in CFS. This survey report can be obtained from your shipping carrier. The said volume can be cross checked with consolidator's invoice while paying amount to them.

[19] Custom Clearance

In India custom clearance is a complex and time taking procedure that every exporter faces in his export business. Physical control is still the basis of custom clearance in India where each consignment is manually examined in order to impose various types of export duties. High import tariffs and multiplicity of exemptions and export promotion schemes also contribute in complicating the documentation and procedures. So, a proper knowledge of the custom rules and regulation becomes important for the exporter.

Exporters may avail services of Customs House Agents (CHA) licensed by the Commissioner of Customs. They are professionals and facilitate work connected with clearance of cargo from Customs. For clearance of export goods, the exporter

or export agent has to undertake the following formalities:

Registration

Any exporter who wants to export his good need to obtain PAN based Business Identification Number (BIN) from the Directorate General of Foreign Trade prior to filing of shipping bill for clearance of export goods. The exporters must also register themselves to the authorised foreign exchange dealer code and open a current account in the designated bank for credit of any drawback incentive.

All the exporters intending to export under the export promotion scheme need to get their licences etc.

Processing of Shipping Bill – Non-EDI

In case of Non-EDI, the shipping bills or bills of export are required to be filled in the format as prescribed in the Shipping Bill and Bill of Export (Form) regulations, 1991. An exporter need to apply different forms of shipping bill/ bill of export for export of duty free goods, export of dutiable goods and export under drawback etc.

Processing of Shipping Bill – EDI

Under EDI System, declarations in prescribed format are to be filed through the Service Centers of Customs. A checklist is generated for verification of data by the exporter/CHA. After verification, the data is submitted to the System by the Service Center operator and the System generates a Shipping Bill Number, which is endorsed on the printed checklist and returned to the exporter/CHA. For export items which are subject to export cess, the TR-6 challans for cess is printed and given by the Service Center to the exporter/CHA immediately after submission of shipping bill. The cess can be paid on the strength of the challan at the designated bank. No copy of shipping bill is made available to exporter/CHA at this stage.

Quota Allocation

The quota allocation label is required to be pasted on the export invoice. The allocation number of AEPC (Apparel Export Promotion Council) is to be entered in the system at the time of shipping bill entry. The quota certification of export invoice needs to be submitted to Customs along-with other original documents at the time of examination of the export cargo. For determining the validity date of the quota, the relevant date needs to be the date on which the full consignment is presented to the Customs for examination and duly recorded in the Computer System.

Arrival of Goods at Docks

On the basis of examination and inspection goods are allowed enter into the Dock. At this stage the port authorities check the quantity of the goods with the documents.

System Appraisal of Shipping Bills

In most of the cases, a Shipping Bill is processed by the system on the basis of declarations made by the exporters without any human intervention. Sometimes the Shipping Bill is also processed on screen by the Customs Officer.

Customs Examination of Export Cargo

Customs Officer may verify the quantity of the goods actually received and enter into the system and thereafter mark the Electronic Shipping Bill and also hand over all original documents to the Dock Appraiser of the Dock who many assign a Customs Officer for the examination and intimate the officers' name and the packages to be examined, if any, on the check list and return it to the exporter or his agent.

The Customs Officer may inspect/examine the shipment along with the Dock Appraiser. The Customs Officer enters the examination report in the system. He then marks the Electronic Bill along with all original documents and check list to the Dock Appraiser. If the Dock Appraiser is satisfied that the particulars entered in the system conform to the description given in the original documents and as seen in the physical examination, he may proceed to allow "**let export**" for the shipment and inform the exporter or his agent.

Stuffing / Loading of Goods in Containers

The exporter or export agent hand over the exporter's copy of the shipping bill signed by the Appraiser "Let Export" to the steamer agent. The agent then approaches the proper officer for allowing the shipment. The Customs Preventive Officer supervising the loading of container and general cargo in to the vessel may give "Shipped on Board" approval on the exporter's copy of the shipping bill.

Drawal of Samples

Where the Appraiser Dock (export) orders for samples to be drawn and tested, the Customs Officer may proceed to draw two samples from the consignment and enter the particulars thereof along with details of the testing agency in the ICES/E system. There is no separate register for recording dates of samples drawn. Three copies of the test memo are prepared by the Customs Officer and are signed by the Customs Officer and Appraising Officer on behalf of Customs and the exporter or his agent.

The Assistant Commissioner/Deputy Commissioner if he considers necessary, may also order for sample to be drawn for purpose other than testing such as visual inspection and verification of description, market value inquiry, etc.

Amendments

Any correction/amendments in the check list generated after filing of declaration can be made at the Service Center, if the documents have not yet been submitted in the system and the shipping bill number has not been generated. In situations, where corrections are required to be made after the generation of the shipping bill number or after the goods have been brought into the Export Dock, amendments is carried out in the following manners.

- The goods have not yet been allowed "let export" amendments may be permitted by the Assistant Commissioner (Exports).

- Where the «Let Export» order has already been given, amendments may be permitted only by the Additional/Joint Commissioner, Custom House, in charge of export section.

In both the cases, after the permission for amendments has been granted, the Assistant Commissioner / Deputy Commissioner (Export) may approve the amendments on the system on behalf of the Additional /Joint Commissioner. Where the print out of the Shipping Bill has already been generated, the exporter may first surrender all copies of the shipping bill to the Dock Appraiser for cancellation before amendment is approved on the system.

Export of Goods under Claim for Drawback

After actual export of the goods, the Drawback claim is processed through EDI system by the officers of Drawback Branch on first come first served basis without feeling any separate form.

Generation of Shipping Bills

The Shipping Bill is generated by the system in two copies- one as Custom copy and one as exporter copy. Both the copies are then signed by the Custom officer and the Custom House Agent.

[20] Documentation and Realization of Export Proceeds

International market involves various types of trade documents that need to be produced while making transactions. Each trade document is differ from other and present the various aspects of the trade like description, quality, number, transportation medium, indemnity, inspection and so on. So, it becomes important for the importers and exporters to make sure that their documents support the guidelines as per international trade transactions. A small mistake could prove costly for any of the parties. For example, a trade document about the bill of lading is a proof that goods have been shipped on board, while Inspection Certificate certifies that the goods have been inspected and meet quality standards. So, depending on these necessary documents, a seller can assure a buyer that he has fulfilled his responsibility whilst the buyer is assured of his request being carried out by the seller.

The three mandatory documents for export include Bill of Lading/Airway Bill, Commercial invoice cum packing list and Shipping Bill (Bill of Export). Other documents often used in international trade are Certificate of Origin, Combined Transport Document, Draft (or Bill of Exchange), Insurance Policy/Certificate, Inspection Certificate etc.

Air Waybill

Air Waybill make sure that goods have been received for shipment by air. A typical air waybill sample consists of three originals and nine copies. The first original is for the carrier and is signed by the export agent; the second original, the consignee's

copy, is signed by the export agent; the third original is signed by the carrier and is handed to the export agent as a receipt for the goods.

Air Waybill serves as:

- Proof of receipt of the goods for shipment
- An invoice for the freight
- A certificate of insurance
- A guide to airline staff for the handling, dispatch and delivery of the consignment

The major requirements for an Air Waybill :

- The proper shipper and consignee must be mention.
- The airport of departure and destination must be mention.
- The goods description must be consistent with that shown on other documents.
- Any weight, measure or shipping marks must agree with those shown on other documents.
- It must be signed and dated by the actual carrier or by the named agent of a named carrier.
- It must mention whether freight has been paid or will be paid at the destination point.

Bill of Lading (B/L)

Bill of Lading is a document given by the shipping agency for the goods shipped for transportation form one destination to another and is signed by the representatives of the carrying vessel.

Bill of landing is issued in the set of two, three or more. The number in the set will be indicated on each bill of lading and all must be accounted for. This is done due to the safety reasons which ensure that the document never comes into the hands of an unauthorised person. Only one original is sufficient to take possession of goods at port of discharge so, a bank which finances a trade transaction will need to control the complete set. The bill of lading must be signed by the shipping company or its agent, and must show how many signed originals were issued. The bill of lading also forms the contract of carriage.

It will indicate whether cost of freight/carriage has been paid or not i.e., **Freight Prepaid**: paid by shipper or **Freight collect**: to be paid by the buyer at the port of discharge.

To be acceptable to the buyer, the B/L should:

- Carry an "On Board" notation to showing the actual date of shipment, (Sometimes however, the "on board" wording is in small print at the bottom of the B/L, in which cases there is no need for a dated "on board" notation to be shown separately with date and signature.)

- Be "clean" having no notation by the shipping company to the effect that goods/ packaging are damaged.

The main parties involve in a B/L:

- Shipper - The person who send the goods.
- Consignee - The person who take delivery of the goods.
- Notify Party - The person, usually the importer, to whom the shipping company or its agent gives notice of arrival of the goods.
- Carrier - The person or company who has concluded a contract with the shipper for conveyance of goods

The bill of lading must meet all the requirements of the credit as well as complying with UCP 600. These are as follows:

- The correct shipper, consignee and notifying party must be shown.
- The carrying vessel and ports of the loading and discharge must be stated.
- The place of receipt and place of delivery must be stated, if different from port of loading or port of discharge.
- The goods description must be consistent with that shown on other documents.
- Any weight or measures must agree with those shown on other documents.
- Shipping marks and numbers and /or container number must agree with those shown on other documents.
- It must state whether freight has been paid or is payable at destination.
- It must be dated on or before the latest date for shipment specified in the credit.
- It must state the actual name of the carrier or be signed as agent for a named carrier.

Certificate of Origin

The Certificate of Origin is required by the custom authority of the importing country for the purpose of imposing import duty. It is usually issued by the Chamber of Commerce and contains information like seal of the chamber, details of the good to be transported and so on. The certificate must provide that the information required by the credit and be consistent with all other document.

Certificate of Origin would normally include:

- The name of the company and address as exporter.
- The name of the importer.
- Package numbers, shipping marks and description of goods to agree with that on other documents.
- Any weight or measurements must agree with those shown on other documents.
- It should be signed and stamped by the Chamber of Commerce.

Combined Transport Document

Combined Transport Document is also known as Multimodal Transport Document, and is used when goods are transported using more than one mode of transportation. In the case of multimodal transport document, the contract of carriage is meant for a combined transport from the place of shipping to the place of delivery. It also evidence receipt of goods but it does not evidence on board shipment, if it complies with ICC 600. The liability of the combined transport operator starts from the place of shipment and ends at the place of delivery. This documents need to be signed with appropriate number of originals in the full set and proper evidence which indicates that transport charges have been paid or will be paid at destination port.

Multimodal transport document would normally shows:

- That the consignee and notify parties are as the credit.
- The place goods are received, or taken in charges, and place of final destination.
- Whether freight is prepaid or to be collected.
- The date of dispatch or taking in charge, and the "On Board" notation, if any must be dated and signed.
- Total number of originals.
- Signature of the carrier, multimodal transport operator or their agents.

Commercial Invoice

Commercial Invoice document is provided by the seller to the buyer. Also known as export invoice or import invoice, commercial invoice is finally used by the custom authorities of the importer's country to evaluate the good for the purpose of taxation.

The invoice must:

- Be issued by the beneficiary named in the credit (the seller).
- Be address to the applicant of the credit (the buyer).
- Be signed by the beneficiary (if required).
- Include the description of the goods exactly as detailed in the credit.
- Be issued in the stated number of originals (which must be marked "Original) and copies.
- Include the price and unit prices if appropriate.
- State the price amount payable which must not exceed that stated in the credit
- include the shipping terms.

Consular invoice

A consular invoices is a document that is required by some countries like Kenya, Tanzania, Mauritus, New Zealand, Australia, Iraq, Fiji, Nizeria, Myanmar etc.

Packing List

Also known as packing specification, it contain details about the packing materials used in the shipping of goods. It also include details like measurement and weight

of goods. The packing List must have a description of the goods consistent with the other documents. It must have details of shipping marks and numbers consistent with other documents

Bill of Exchange

A Bill of Exchange is a special type of written document under which an exporter ask importer a certain amount of money in future and the importer also agrees to pay the importer that amount of money on or before the future date. This document has special importance in wholesale trade where large amount of money involved.

Persons involved in a Bill of Exchange:

- **Drawer:** The person who writes or prepares the bill.
- **Drawee**: The person who pays the bill.
- **Payee**: The person to whom the payment is to be made.
- **Holder of the Bill**: The person who is in possession of the bill.

Types of Bill of Exchange

On the basis of the due date there are two types of Bill of Exchange:

- **Bill of Exchange after Date**: In this case the due date is counted from the date of drawing.
- **Bill of Exchange after Sight**: In this case the due date is counted from the date of acceptance of the bill.

Insurance Certificate

Also known as Insurance Policy, it certifies that goods transported have been insured under an open policy and is not actionable with little details about the risk covered. It is necessary that the date on which the insurance becomes effective is same or earlier than the date of issuance of the transport documents.

Also, if submitted under a LC, the insured amount must be in the same currency as the credit and usually for the bill amount plus 10 per cent.

The requirements for completion of an insurance policy are as follow:

- The name of the party in the favour which the documents has been issued.
- The name of the vessel or flight details.
- The place from where insurance is to commerce typically the sellers warehouse or the port of loading and the place where insurance cases usually the buyer's warehouse or the port of destination.
- Insurance value that specified in the credit.
- Marks and numbers to agree with those on other documents.
- The description of the goods, which must be consistent with that in the credit and on the invoice.

- The name and address of the claims settling agent together with the place where claims are payable.
- Countersigned where necessary.
- Date of issue to be no later than the date of transport documents unless cover is shown to be effective prior to that date.

Inspection Certificate

Certificate of Inspection is a document prepared on the request of seller when he wants the consignment to be checked by a third party at the port of shipment before the goods are sealed for final transportation. In this process seller submit a valid Inspection Certificate along with the other trade documents like invoice, packing list, shipping bill, bill of lading etc to the bank for negotiation. On demand, inspection can be done by various world renowned inspection agencies on nominal charges.

Realization of Export Proceeds

After shipment, it is obligatory to present the documents to the Bank within 21 days for onward dispatch to the foreign Bank for arranging payment. Documents should be drawn under Collection/ Purchase/ Negotiation under LC as the case may be, along with the following documents:

- Bill of Exchange
- Letter of Credit (if shipment is under LC)
- Invoice and Packing List
- Bill of Lading / Airway Bill
- Shipping Bill / Bill of Export
- Declaration under Foreign Exchange
- Certificate of Origin/ GSP
- Inspection Certificate, wherever necessary
- Any other document as required by buyer

On receiving the documentary Bill of Exchange, the importer releases payment in case of sight draft or accepts the usance undertaking to pay on maturity of the Bill of Exchange. The exporter's bank receives the payment through importer's bank and is credited to exporter's accounts.

- As per FTP 2015-2020, all export contracts and invoices shall be denominated either in freely convertible currency of Indian rupees, but export proceeds should be realized in freely convertible currency except for export to Iran.
- Export proceeds should be realized in 9 months.
- Contact DGFT office for getting benefits of exports such as MEIS and others.

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Appendix 1

HS Codes of Major Seed Spices

Indian Trade Classification of Harmonized Commodity Description and Coding System (Harmonized System, or HS) (8 digit) Codes of Seed Spices and their products

Seed Spice	ITC(HS) Code	Item Description
Cumin	0909 31 11	Black seed quality
	0909 31 19	Black seeds
	0909 31 21	White seed quality
	0909 31 29	White seeds
	0909 32 00	Powder
	3301 29 45	Oil
	3301 90 24	Oleoresins
Fennel	0909 61 31	Seed quality
	0909 61 39	Seeds
	0909 62 30	Powder
	3301 29 25	Seed Oil
	3301 90 25	Oleoresins
Coriander	0909 21 10	Seed quality
	0909 21 90	Seeds
	0909 22 00	Powder
	3301 29 22	Seed Oil
	3301 90 23	Oleoresins
Fenugreek	0910 99 12	Seed
	0910 99 24	Powder
	3301 90 11	Oleoresins

Source: DGFT, GoI,

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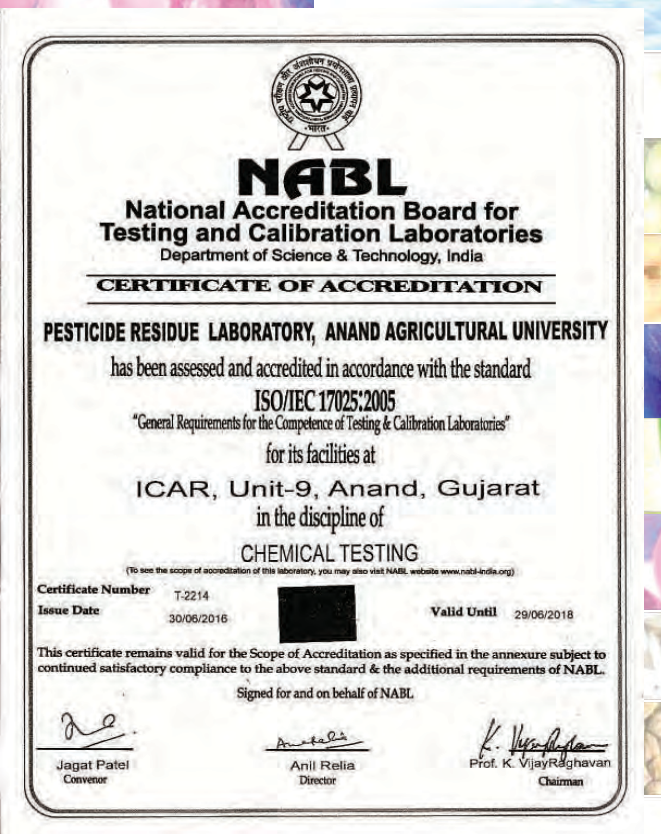
PESTICIDE RESIDUE LABORATORY
ANAND AGRICULTURAL UNIVERSITY, ANAND

The only laboratory of the State Government with NABL 17025:200 5 in the field of Pesticide Residues.

The laboratory is actively involved in analysis of market samples like vegetables, fruits, cereals, pulses, animal feed and milk for consumer exposure.



NABL

National Accreditation Board for Testing and Calibration Laboratories

Department of Science & Technology, India

CERTIFICATE OF ACCREDITATION

PESTICIDE RESIDUE LABORATORY, ANAND AGRICULTURAL UNIVERSITY

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

ICAR, Unit-9, Anand, Gujarat

in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-2214

Issue Date 30/06/2016

Valid Until 29/06/2018

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

Jagat Patel, Convenor | Anil Relia, Director | Prof. K. VijayRaghavan, Chairman

The scope includes vegetables, fruits, cereals, pulses, milk and water.

Core laboratory of the western region of the country under Monitoring of pesticide residues at National level, sponsored by Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India

Residue Analyst
AINP on Pesticide Residues,
ICAR, Unit-9
Anand Agricultural University
Anand – 388110, Gujarat
(O) 02692 652807, ainp_pr_anand@yahoo.co.in

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