RESURGENT AGRIC

CARDAMOM

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Ref **;** *Resurgent Agric ICardamomVer 01*

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1. Agricultural and Botanical details

Cardamom (Elettaria cardamomum Maton) is one of the oldest known spices in the world. Evergreen forests of Western Ghats of South India are considered as the centre of origin as well as natural habitat of cardamom. Cardamom is commercially cultivated for its dried fruits (capsules), which is also referred to as cardamom of commerce. Cardamom, sometimes cardamon or cardamum, is a spice made from the seeds of several plants in the genera Elettaria and Amomum in the family Zingiberaceae. Both genera are native to the Indian subcontinent and Indonesia. They are recognized by their small seed pods: triangular in cross-section and spindle-shaped, with a thin, papery outer shell and small, black seeds; Elettaria pods are light green and smaller, while Amomum pods are larger and dark brown.

The crop thrives well in regions which receive a well-distributed annual rainfall of 1500-2500 mm with a mean temperature of 15°C to 35°C and 600-1200 m above MSL. Cardamom grows luxuriantly in forest loam soils, which are generally acidic in nature with a pH range of 5.5-6.5. Growth of cardamom is enhanced, when planted in humus rich soils with low to medium available phosphorus and medium to high available potassium.

2. Uses

Cardamom is used as flavourings and cooking spices in both food and drink, and as a medicine. E. cardamomum (green cardamom) is used as a spice, a masticatory, and in medicine; it is also smoked. Intact and opened cardamom pods, showing the seeds (20mm Indian 1-rupee coin for scale) Food and beverage Besides use as flavourant and spice in foods, cardamom-flavoured tea, also flavoured with cinnamon, is consumed as a hot beverage in Bangladesh, India, Nepal, and Pakistan. Cardamom has a strong, unique taste, with an intensely aromatic, resinous fragrance. Black cardamom has a distinctly more smoky, though not bitter, aroma, with a coolness some consider similar to mint. Green cardamom is one of the most expensive spices by weight but little is needed to impart flavour. It is best stored in the pod, as exposed or ground seeds quickly lose their flavour. Grinding the pods and seeds together lowers both the quality and the price. For recipes requiring whole cardamom pods, a generally accepted equivalent is 10 pods equals 1 1⁄2 teaspoons of ground cardamom. It is a common ingredient in Indian cooking. It is also often used in baking in the Nordic countries, in particular in Sweden, Norway, and Finland, where it is used in traditional treats such as the Scandinavian Yule bread Julekake, the Swedish kardemummabullar sweet bun, and Finnish sweet bread pulla. In the Middle East, green cardamom powder is used as a spice for sweet dishes, as well as traditional flavouring in coffee and tea. Cardamom is used to a wide extent in savoury dishes. In some Middle Eastern countries, coffee and cardamom are often ground in a wooden mortar, a mihbaj, and cooked together in a skillet, a mehmas, over wood or gas, to produce mixtures as much as 40% cardamom. In Asia, both types of cardamom are widely used in both sweet and savory dishes, particularly in the south. Both are frequent components in spice mixes, such as Indian and Nepali masalas and Thai curry pastes. Green cardamom is often used in traditional Indian sweets and in masala chai (spiced tea). Both are also often used as a garnish in basmati rice and other dishes. Individual seeds are sometimes chewed and used in much the same way as chewing gum. It is used by confectionery giant Wrigley; its Eclipse Breeze Exotic Mint

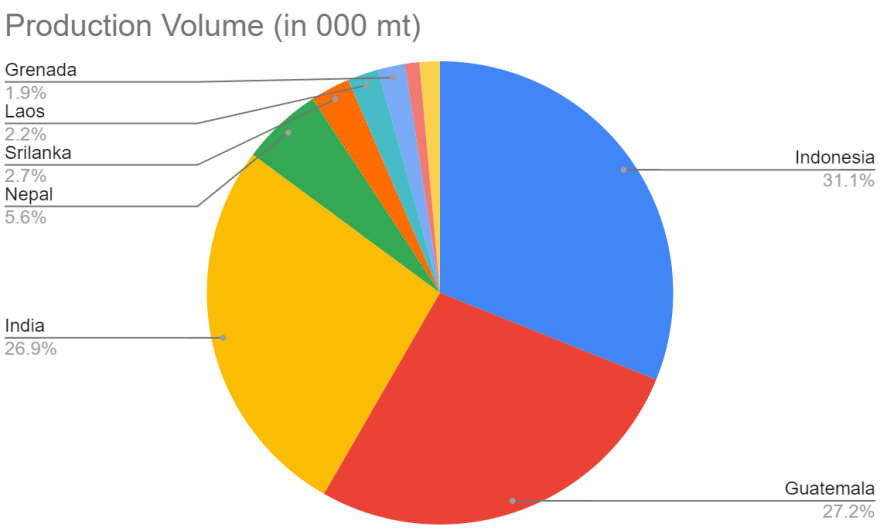
packaging indicates the product contains "cardamom to neutralize the toughest breath odors". It is also included in aromatic bitters, gin, and herbal teas. In Korea, medicinal cardamom (Amomum villosum var. xanthioides) and black cardamom (Amomum tsao-ko) are used in traditional tea called jeho-tang.

3. Production

3.1 Worldwide

By the early 21st century, Guatemala became the largest producer of cardamom in the world, with an average annual yield between 25,000 and 29,000 tonnes. The plant was introduced there in 1914 by Oscar Majus Kloeffer, a German coffee planter. India, formerly the largest producer, presently stands at the third place, generating around 38,000 tonnes annually. The table below shows the production volume of cardamom produced in top producing countries.

Country	Production Volume (in 000 mt)
Indonesia	43.97
Guatemala	38.39
India	38
Nepal	7.95
Srilanka	3.88
Laos	3.04
Grenada	2.67
Bhutan	1.41
Others	2



3.2 In India

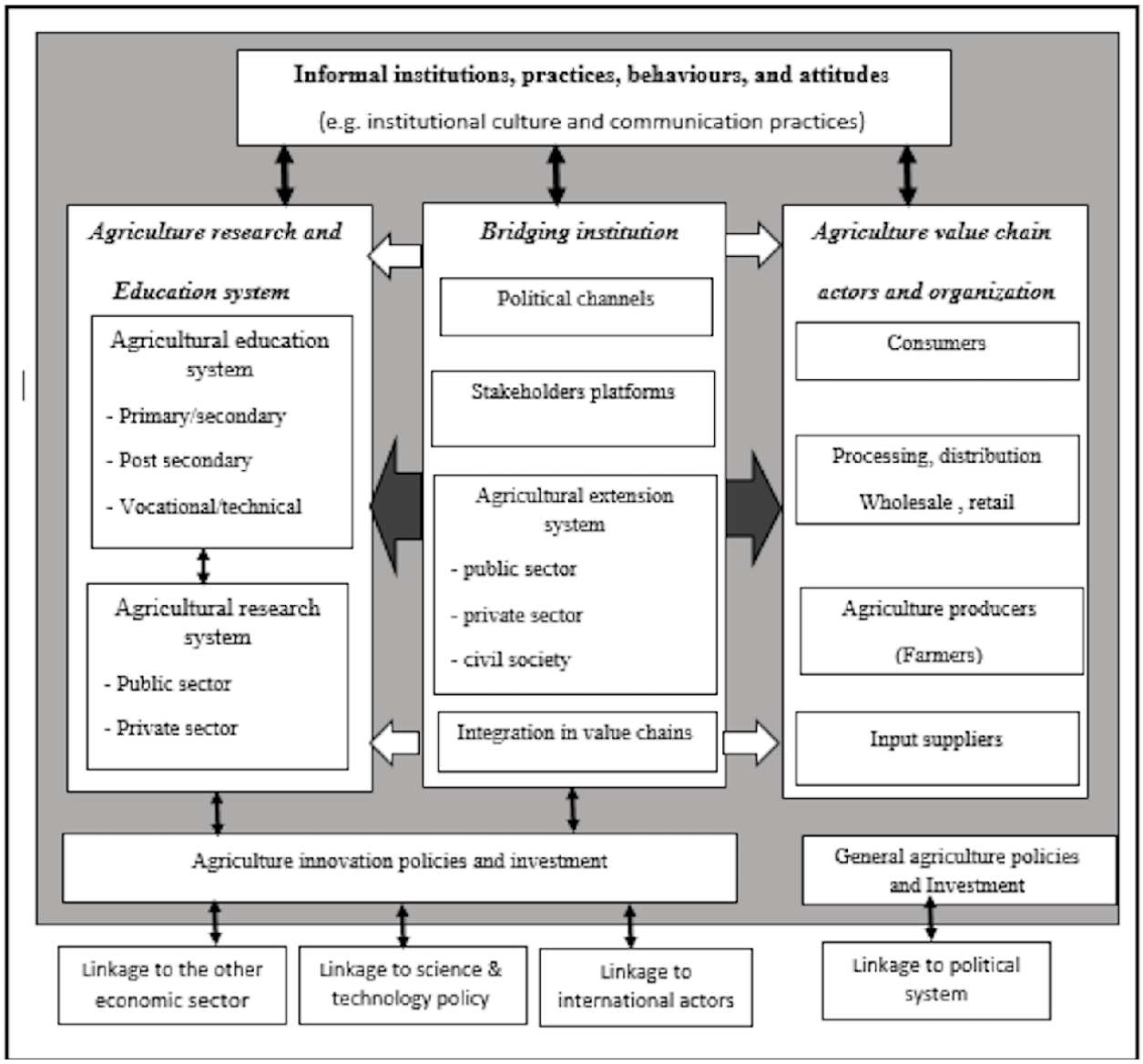
Sl. No.	STATES	2016-17		2017-18		2018-19		2019-20 (3rd Adv.Est.)	
		A	P	A	P	A	P	A	P
1	KERALA	38.00	18.00	39.08	18.35	38.88	11.54	39.70	10.08
2	SIKKIM	18.00	5.00	18.00	5.00	21.80	5.23	23.31	4.78
3	NAGALAND	4.05	2.02	3.62	2.02	4.09	2.30	4.09	2.31
4	ARUNACHAL PRADESH					7.41	1.87	10.91	1.61
5	WEST BENGAL	2.96	0.76	2.96	0.76	3.31	1.07	3.31	1.09
6	TAMIL NADU	4.01	0.35	3.86	0.35	3.82	0.35	3.79	0.35
7	KARNATAKA	17.66	1.53	16.68	1.76	1.80	0.21	1.77	0.21
8	MANIPUR							0.15	0.0043
	TOTAL	**84.68**	**27.66**	**84.20**	**28.24**	**81.11**	**22.57**	**87.02**	**20.42**

A- Area in 1000 Ha
P- Production Volume in MT

In 2019, the area of plantation for small cardamoms was estimated stable and relatively unchanged as compared to the period of 2018 with a total 69,132 Ha of which Kerala State 38,882 Ha, Karnataka State 25,135 Ha and Tami Nadu State 5,115 Ha. Contrary to small cardamoms, the total area of plantation for large cardamoms was estimated with a significant increase of 61% as compared to the previous period to a total of 42,826 Ha. The increase of the total area of plantation for large cardamoms in India could be contributed to the opening of large cardamom plantations in other states in India such as Nagaland State and Arunachal Pradesh State. In2019, estimated area of plantation for India's large cardamom were Sikkim

State with 23,312 Ha, West Bengal States with 3,305 Ha, Nagaland States with 6,308 Ha and Arunachal Pradesh State with 9,901 Ha. Furthermore, for the year 2020, the area under cardamoms cultivation was projected to slightly decrease by 0.1% as compared to the previous year to a total of 111,869 Ha in 2020 which 62% or a total of 69,043 Ha was of small cardamoms and 38% or 42,826 Ha was of large cardamoms.

4. Framework of commodity - forward/backward /lateral linkage



5. Varieties of commodity grown in India

Two varieties of cardamom plants are identified, and they are *Elettaria cardamomum* Maton, variety Major composed of wild indigenous types of Sri Lanka and *Elettaria cardamomum* Maton, variety Minor comprising of cultivars like, *Mysore, Malabar* and *Vazhukka.* These types are grown in different tracts and are mostly identified on the nature of panicles, size of plants and other morphological characters. Cardamom varieties are highly location specific. High yielding varieties of cardamom released include ICRI 1,2,3:TDK 4 &11;PV 1,PV 2, CCS 1 Mudugiri 1;NCC 200; MCC 12,16 & 40. ISSR Vijetha is resistant to Katte disease and is reccomended to moderate rainfall with moderate to high shaded Mosaic (CMV) infected areas. IISR Avinash is resistant to Rizhome Rot and is highly suitable for planting in village.

Cultivar Malabar

- These cardamom plants have medium size and attain 2-3 m height on maturity.
- The dorsal side of leaves may be pubescent or glabrous.
- The panicles are prostrate and the fruits are globose to oblong shaped.
- Better suited to areas of 600 to 1200 m elevation.
- Relatively less susceptible to thrips.
- It can thrive under low rainfall and seasonal rainfall conditions.
- This type is mostly cultivated in Karnataka and to a lesser extent in Kerala and Tamil Nadu.

Cultivar Mysore

- Plants are robust and attain 3-4 m height.
- The leaves are lanceolate or oblong-lanceolate or glabrous on both sides.
- The panicles are erect and the capsules are ovoid bold and dark green in colour.
- Better adapted to altitudes ranging from 900 to 1200 m from MSL
- Thrive well under assured, well-distributed rainfall conditions.
- Mostly cultivated in Kerala and in certain pockets of Tamil Nadu and Karnataka.

Cultivar Vazhukka

- This is considered to be the natural hybrid of Malabar and Mysore types and consequently, the plants belonging to this group exhibit various characteristics intermediate to Mysore and Malabar types.

- The plants are robust like Mysore type.
- Leaves are deep green, oblong-lanceolate or ovate, panicles are semi-erect (pendent) in nature and capsules are bold globose or ovoid in shape.
- Extensively cultivated in Kerala and Tamil Nadu at elevations ranging from 900-1200 m above MSL.

High yielding varieties and selections

Selection/ varieties	Cultivar	Special distinguishing characteristics	Area of adaptability	Yield potential kg/ha
ICRI-1	Malabar	An early maturing profusely flowering variety, medium sized panicle with globose extra bold dark green coloured capsules	South Idukki zone of Kerala, where the rainfall is well distributed	656
ICRI-2	Mysore	Performs well under irrigated conditions. Suitable for higher altitude. It has medium long panicles oblong bold and parrot green capsules (Tolerant to azhukal disease)	Vandanmedu and Nelliampathy of Kerala and Annamalai and Meghamalai of Tamil Nadu.	766
ICRI-3	Malabar	Early maturing type, non-pubescent leaves, oblong bold, parrot green capsules. It is tolerant to rhizome rot disease.	Cardamom growing tract of Karnataka.	790
TDK-4	Malabar	An early maturing variety adaptable to low rainfall area. Medium size panicle, globose bold parrot green capsules. Non-pubescent leaves.	Adapted to lower Pulney Hills of Tamil Nadu. Suitable for low rainfall area (1500 mm) and having similar agro-ecological conditions	961

TDK-11	Malabar	An early maturing variety, Long panicle, oblong bold and parrot green capsules.	Adapted to less rainfall conditions of Lower Pulney Hills of Tamil Nadu.	890
PV-1	Malabar	An early maturing variety with slightly ribbed light green capsules. Short panicle, close racemes, narrowly ellipsoid to elongate capsules.	All cardamom growing tracts in Kerala and parts of Tamil Nadu	500
PV-2	Vazukka	An early maturing, unbranched, lengthy panicle, long bold capsule	Higher altitude	1250
CCS-1	Malabar	An early maturing variety suitable for high density planting, long panicle, oblong bold, parrot green capsules	All Cardamom growing tracts of Karnataka and Wyanad of Kerala.	1156
Mudigere-1	Malabar	Compact plant, suitable for high density planting. Tolerant to hairy caterpillars and white grubs. Short panicle, oval bold, pale green capsules. Tolerant to thrips and shoot borer, pubescent leaves.	In the traditional cardamom growing Malnad areas of Karnataka	1000
NCC-200 (Njallani)	Vazhukka	Non-pubescent, semi erects, globose extra bold and dark green capsules.	Suitable to Kerala tracts	-
MCC-12	Vazhukka	Semi-erect panicles and dark deep green capsule suitable under sparse shade condition	Oblong capsules suitable under sparse shade condition of	620

			Kerala	
MCC-16	Vazhukka	Profusely branched compound and semi-erect panicle. Globose green capsules recommended for irrigated or swampy areas.	Adaptable to Kadamkuzhy and Udumbanchola zones of Kerala	650
MCC-40	Vazhukka	An early bearing variety, globose bold and green capsules.	Suitable to all cardamom growing tracts of Kerala	443 (Rainfed)

Newly released varieties from regional research station, Mudigere

Mudigere-2 : It is also a Malabar type and clonal selection, released during 1994, the average yield of M-2 is 475 kg/ha, with non-pubescent leaves and panicles are not compact with good quality capsules.

P6 : This clone having recorded higher dry matter accumulation and leaf area index consistently over years, is found promising as a drought tolerant clone.

CL-730 and CL-692 : New Cardamom clones selection from germpalsm collection were found promising by recording 1.57 and 1.53 kg of green capsule yield per clump respectively as against Mudigere-1 (1.2 kg) and Mudigere-2 (1.4kg). The clones CL-692 have been proposed for farm trials during 2001-02.

CL-D-237 : A new clone developed from open pollinated seedling progenies was found promising. The average yield of green capsule per clump was 1.80 kg as against 1.40 kg in Mudigere-2 and 1.20 kg in Mudigere-1.

Among the several clones studied, clone Mudigere-1 exhibited relatively low genetic variability. Hence, seedling progenies of this clone could still be used when clonal material is not available for scale planting.

Varieties released from Indian Institute of Spices Research

Name	Average yield kg/ha (dry)	Essential oil, %	Dry recovery, %	Terpenyl acetate, %	1.8 cineole, %

Coorg cardamom -1	409	8.7	22	37	42
Suvasini	745	8.7	22	37	42
Avinash	847	6.7	20	34.6	30.4
Vijetha -I	643	7.9	22	23.4	44.9

6. Domestic Consumption

Spices	Year	Domestic consumption (Tons)
Cardamom (small)	2015-16	19,240
	2016-17	15,860
	2017-18	15,655
	2018-19(*)	11,053
Cardamom (large)	2015-16	8,125
	2016-17	7910
	2017-18	10,815
	2018-19(*)	7,723

Roughly 80 to 90 percent of cardamom cultivated in Kerala is supplied domestically, due to the high demand from North India. To meet the local market, India even imports low-quality Guatemalan cardamom, which affects the price and standardisation of the Indian variant. Cardamom Growers and traders said that the average price touched a decade high of Rs 1,500 per kg this week from Rs 1,200 three months ago. Premium quality small cardamom is selling at an even higher rate of Rs 1,700 a kilogram. To quote, “the price of Cardamom raised to Rs. 4000, which is the highest in the past 25 years, which is a result of plants affected by heavy rain earlier and drought in the corresponding next year. It is unfortunate to see minimal production and supply of Cardamom due to erratic climatic conditions”. Due to the heavy rains, many cardamom plantations were destroyed. This resulted in a low yield. At the same time, both overseas and local demand increased and ultimately rose in price of cardamom. In fact, “the traders and farmers are benefiting from import and export of cardamom. A significant part of the cardamom produced in India is consumed in the country itself. India also imports low-quality Guatemalan small

cardamom to meet the demands. Cardamom produced in Guatemala costs half the Indian variant's price, and a large volume of it is imported to India. This makes its price fluctuate drastically. The mixing of Guatemalan cardamom and Indian cardamom has resulted in a decline in the latter's quality. There is an abundant inflow of cardamom stock as the auctions are conducted byKerala cardamom processing marketing company.It strictly adheres to Export Quality standards. Theimporter should be well aware of market trends and market prices and have a proper assessment of the supply and demand position of Cardamom.The product is being sold mainly in auctions held at Vandanmedu, 28 km south of Kattappana, and Bodinayakanur in Tamil Nadu. And from there, it travels to ports abroad.

7. Exports - Quantity and Value

The details of total cardamom produced, exported and imported during the last three years and in the current year are given in the table:

Production, Export & Import of Cardamom

Spices	Year	Production (Tons)	Export		Import	
			Quantity (Tons)	Value (Rs.Crore.)	Quantity (Tons)	Value (Rs.Crore)
Cardamom (small)	2015-16	23,890	5,500	449.83	850	44.74
	2016-17	17,990	3,850	421.5	1720	88.7
	2017-18	20,650	5,680	609.08	685	43.79
	2018-19(*)	12,950	2,250	242.5	353	28.24
Cardamom (large)	2015-16	5,315	600	75.51	3410	307.95
	2016-17	5570	780	82.65	3120	242.42
	2017-18	5,905	760	56.47	5,670	331.09
	2018-19(*)	6,038	585	34.63	2,270	119.86

The price of cardamom(small) has been showing a fluctuating trend during the last three years. During the current year, the price has shown an increasing trend in the domestic market. However, the price of cardamom (large) has been showing a declining trend in the domestic market from the year 2015-16 onwards. The weighted average auction price of cardamom(small) in India and the average domestic price of cardamom(large) at Gangtok for the last three years and in the current year are given below:

Crop Year	Weighted Average Auction Price of cardamom (small)
2015-16	628.64
2016-17	1088.5
2017-18	955.82
2018-19 (Aug-Dece.) (provisional)	1246.23

8. Major production organisations

S No	Company	Address	Contact	Website
1	AZAD SPICE GARDENS PRIVATE LIMITED	Azad Retail Store, Kowdiar, Thiruvananthapuram, Kerala, 695014, India	8037261528	http://www.mightygarden.in/
2	SHYAM DHANI INDUSTRIES PRIVATE LIMITED	B No. F-438 A, Road No. 12, V.K.I. Area, Jaipur, Rajasthan, 302013, India	8048763172	https://www.shyamdhanispices.com/
3	SRI MAHALAXMI INDUSTRIES	Sri Mahalaxmi Industries, Post Office Road, Hethur, Sakleshpur, Karnataka, 573123, India	8037301446	https://www.unnathitea.com/
4	GINNI & SONS	Sarojini Enclave, Saraswati App, 4B Deepa Toly, Near Surendranath School, Kokar, Ranchi, Jharkhand, 834001, India	8035928881	https://www.ginniandsons.com/
5	YESRAJ AGRO EXPORTS PVT. LTD.	Mahalaxmi, Market Yard, Guitekdi, Market Yard, Pune, Maharashtra, 411037, India	9028080570	https://www.yesrajagroexports.com/

6	SKM Internatonal Pvt. Ltd.	Plot No.-49, Village Shikarpur, Najafgarh, Near Delhi Gate, New Delhi, Delhi, 110043, India	8045804447	
7	VASU MEDHA	B No. 205, Nataraja Road, CP Bazaar, Sirsi, Karnataka, India	: 08037400182	https://www.vasumedhatraders.com/
8	SUN ENTERPRISE	B No. NA, Charaideo, Baku Pukhuri Habi Gaon, Near Dhudar Ali, Dholebagan, Sibsagar, Assam, 785686, India	8045804402	https://www.sunenterprisesassam.com/

9. Major domestic sales organisations

S No	Company	Address	Contact	Website
1	VINOD SNACKS & CONFECTIONERS PRIVATE LIMITED	Building No.- 52/3/2, Swarn Park, Udyog Nagar, Mundka, New Delhi, Delhi, 110041, India	8037301841	
2	AZAD SPICE GARDENS PRIVATE LIMITED	Azad Retail Store, Kowdiar, Thiruvananthapuram, Kerala, 695014, India	8037261528	http://www.mightygarden.in/
3	Btl Herbs & Spices Pvt. Ltd.	M - 7, 1st Floor, Plot No. 7, Sector - 19B, Phase - II, APMC Dana Market - II, Vashi, Navi Mumbai, Maharashtra, 400705, India	8048737770	https://www.btlherbsspices.in/
4	SHYAM DHANI INDUSTRIES PRIVATE LIMITED	B No. F-438 A, Road No. 12, V.K.I. Area, Jaipur, Rajasthan, 302013, India	8048763172	https://www.shyamdhanispices.com/

5	SRI MAHALAXMI INDUSTRIES	Sri Mahalaxmi Industries, Post Office Road, Hethur, Sakleshpur, Karnataka, 573123, India	8037301446	https://www.unnathitea.com/
6	GINNI & SONS	Sarojini Enclave, Saraswati App, 4B Deepa Toly, Near Surendranath School, Kokar, Ranchi, Jharkhand, 834001, India	8035928881	https://www.ginniandsons.com/
7	YESRAJ AGRO EXPORTS PVT. LTD.	Mahalaxmi, Market Yard, Guitekdi, Market Yard, Pune, Maharashtra, 411037, India	9028080570	https://www.yesrajagroexports.com/
8	VASU MEDHA	B No. 205, Nataraja Road, CP Bazaar, Sirsi, Karnataka, India	:08037400182	https://www.vasumedhatraders.com/
9	AL HASSAN GROUP OF ENTERPRISE	Ward No.10, District Hailakandi Lala Bazar, Lala Rural College, Guwahati, Assam, 788163, India	8037304421	

10. Major Export organisations

S No	Company	Address	Contact	Website
1	AZAD SPICE GARDENS PRIVATE LIMITED	Azad Retail Store, Kowdiar, Thiruvananthapuram, Kerala, 695014, India	8037261528	http://www.mightygarden.in/
2	Btl Herbs & Spices Pvt. Ltd.	M - 7, 1st Floor, Plot No. 7, Sector - 19B, Phase - II, APMC Dana Market - II, Vashi, Navi Mumbai, Maharashtra, 400705, India	8048737770	https://www.btlherbsspices.in/
3	SHYAM DHANI INDUSTRIES PRIVATE LIMITED	B No. F-438 A, Road No. 12, V.K.I. Area, Jaipur, Rajasthan, 302013, India	8048763172	https://www.shyamdhanispices.com/

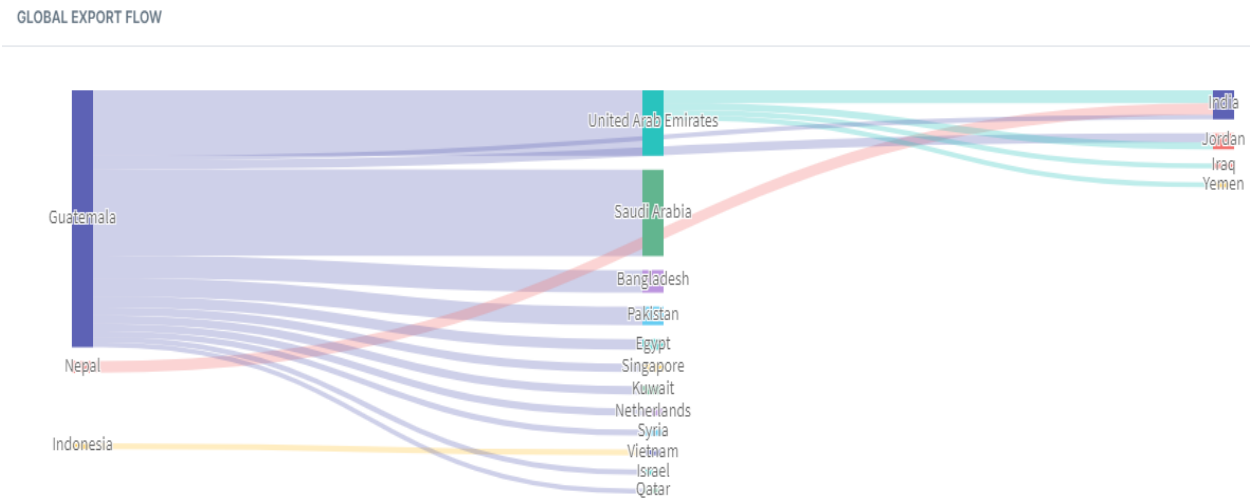
4	SRI MAHALAXMI INDUSTRIES	Sri Mahalaxmi Industries, Post Office Road, Hethur, Sakleshpur, Karnataka, 573123, India	8037301446	https://www.unnathitea.com/
5	GINNI & SONS	Sarojini Enclave, Saraswati App, 4B Deepa Toly, Near Surendranath School, Kokar, Ranchi, Jharkhand, 834001, India	8035928881	https://www.ginniandsons.com/
6	YESRAJ AGRO EXPORTS PVT. LTD.	Mahalaxmi, Market Yard, Guitekdi, Market Yard, Pune, Maharashtra, 411037, India	9028080570	https://www.yesrajagroexports.com/
7	VASU MEDHA	B No. 205, Nataraja Road, CP Bazaar, Sirsi, Karnataka, India	:08037400182	https://www.vasumedhatraders.com/
8	SUN ENTERPRISE	B No. NA, Charaideo, Baku Pukhuri Habi Gaon, Near Dhudar Ali, Dholebagan, Sibsagar, Assam, 785686, India	8045804402	https://www.sunenterprisesassam.com/
9	SLN COFFEE PVT. LTD.	P.B No.47, K.I.A.D.B Industrial Area, Kudlur, Kodagu, Kushalnagar, Karnataka, 571234, India	8037744991	https://www.slncoffee.com/
10	JAI DADI ENTERPRISES	B No.26/13, Fakir Bagan Lane, Pilkhana, Howrah, West Bengal, 711101, India	8037400313	http://www.jaidadienterprises.com/

11. Major importing countries of Indian produce of the commodity

Country	Export Value (in M$)	Export Quantity (in MT)
Global	55.36	3.16K
United Arab Emirates	20.98	959.17
Kuwait	6.03	213.87

Pakistan	3.91	467.85
Iran	3.85	1620
United States	3.33	170.92
Afghanistan	2.71	352.74
United Kingdom	1.89	141.91
Saudi Arabia	1.37	98.05
Oman	1. 21	45.91

12. Network of origin countries and importing countries other than India



Trade flows:

Top 5		2019
1	Guatemala to Saudi Arabia	$190.6M
2	Guatemala to United Arab Emirates	$144.6M
3	Guatemala to Bangladesh	$49.8M
4	Guatemala to Pakistan	$40.7M
5	United Arab Emirates to India	$28.3M

Fastest Growing		2014-2019
1	United Arab Emirates to Yemen	+75463.48%
2	United Arab Emirates to Iraq	+12860.9%
3	Guatemala to Qatar	+11191.82%
4	United Arab Emirates to Jordan	+2655.65%
5	India to Vietnam	+1265.6%

Fastest Declining		2014-2019
1	India to Saudi Arabia	-94.8%
2	United Arab Emirates to Vietnam	-90.66%
3	United Arab Emirates to Singapore	-69.78%
4	India to Pakistan	-64.46%
5	Guatemala to Yemen	-49.92%

13. Apex bodies/Associations

14.1 In India

Spices Board India

The apex body is the Board consisting of 32 Members headed by Chairman. They represent various interests relevant to the role and functions of the Spices Board, which deliberate and take decisions pertaining to policy matters, schemes and important activities of the Board. Besides, there are three Statutory Committees viz. Executive Committees, Market Development Committee for Spices and Research & Development Committee for Cardamom. The meetings of the Board and these Committees are held from time to time and decisions on the areas relating to them are taken. The meetings of the Board and Committees are not open to the public.

The United Planters Association of South India
Mission:

1. To promote, diffuse and disseminate knowledge relating to planting and the plantation industry.

2. To promote trade, commerce and industry and aid its development.To undertake scientific research in all aspects relating to plantation crops.
3. To promote united or concerted actions among members in all matters affecting the general or common interests of members and to promote and protect in all parts of the world the interests of the various planting industries carried on in Southern India.
4. To collect, classify, circulate and publish statistics and other information relating to production, distribution, finance, employment conditions and any other matters affecting the planting industries of Southern India; and to present in whatever manner necessary the true facts relating to the planting industries so as to promote public understanding and appreciation of matters pertaining to those industries.

14.2 International

International Cardamom Association

The ICA (International Cardamom Association) registered in Dubai and with the support of the Government of UAE, has the membership by invite from key suppliers, buyers and policy makers in the cardamom industry. The objective of the association is to provide a platform to take up and find resolution to relevant issues faced by the stakeholders - the farmers, suppliers and the buyers. To maintain high quality of members in the association, membership is offered only to reputed players in the industry. Buyers and Sellers interacting on our online trading platform can have confidence that they are dealing with the best in the industry

14. Commodity Exchanges

MCX: https://www.mcxindia.com/products/agro-commodities/cardamom

15. Major Challenges faced by the industry in domestic and export trade

Farmers are not made properly aware about the new methods in marketing of cardamom, especially those of the export market such as export pricing, statutory regulations of the importing nations, the export incentives and benefits offered by the government, and the need to interact with the Spices Board of India offices for addressing of their grievances. This is particularly true in the cases of small farmers, also including a major proportion of medium size farmers whereas larger growers are more adept at keeping their fingers on the market pulses and can afford to hoard their produce waiting for a better market price. Marginal farmers tend to sell their produce immediately after drying, without sorting or grading. Some producers store for some period to wait for high prices. Some of them are increasingly becoming aware of the need for better techniques of drying, grading as per the color of the pod, the size and other factors such as aroma, weight, etc. Many of the medium and small scale farmers depend on the local traders who give relatively high prices and even cash advances after inspecting the samples of farmers. More often the small and marginal farmers would have borrowed money from the local traders even much

before the harvest to meet their very dire financial needs at some point. Thus the initial flow of the merchandise starts from this level. Marketing channels of the cardamom flows from farmers/growers, to local traders, to wholesalers, and/or finally to the exporters. The quantities of supply depends on many factors associated with these different levels of flow and also other intermediaries in the market, including the governmental and other levels. This scenario cannot be summed up in advance or growers selling behavior cannot be predicted at any point of time. Now farmers are familiar with commodity future market, and some of them venture into or try to engage in future markets. Farmers associations are also trying to make more profit through assembling their produce together and operating on a large scale. However, the spices industry is confronting a major challenge of declining quantity for exports due to supply shortfalls and quality concerns. This calls for immediate crisis management by revamping the entire supply chain starting from researchers, farmers, exporters, importers, and consumers while ensuring adequate governmental intervention and back-up support. Cardamom displays huge volatility in pricing as it is affected by domestic and international supply demand patterns. While the demand has been rising, the supply is highly volatile. The major importing countries are the Arabian nations and the demand in the Middle East peaks during the Ramadan fasting period. Usually, the crop from India and Guatemala arrives during this period. In addition, the crop is highly susceptible to pests, diseases, and the vagaries of the monsoon.

In 2016 there was a supply crunch in the Kerala cardamom market following a price fall that forced the cardamom exporters to go slow on shipments. Following a spell of summer rains, the cardamom prices fell by Rs 200 to around Rs 1100 per kg prompting the growers to hold the stock. As the cost of cultivation, grading and other labor intensive works have increased the overall cost substantially; farmers remain unwilling to sell or produce more. Thus it became difficult to source good quality cardamom as the supply has dropped. Consequently, exporters stand unable to meet the full demand, especially of the quality conscious countries of the western hemisphere. The arrivals to the auction centers have thinned. As presumably the growers must be holding on to the stock with the anticipation that the prices will go up again, the cardamom output had touched a record 25,000 to 30,000 tons in 2015-16. Though prices have dropped, the growers were relieved to have summer showers as it will help boost the prospects of the next crop. But again the difficulties are not likely to be resolved as excess rain and inadequate sunshine particularly in the flowering or even harvesting periods are likely to slow down procurement and consequently the availability of product for the export market dwindle as can be seen in the data below (Krishnakumar, 2017)

Rejection of Export Materials

Farmers of spices like cardamom, chilly and ginger are heavily dependent on chemicals for pest and disease control and fertilizers. Indiscriminate use of chemicals results in pesticide residues beyond tolerable limits, leading to rejection of many consignments of spices from India. Trade restrictions on contaminated food or feeds have the greatest effect on countries like India, which currently have limited, or no available means of monitoring aflatoxin levels.

The toxins are particularly carcinogenic in humans and eating contaminated food often results in liver cancer, amongst other diseases. Aflatoxins also act an immuno-suppressant so that affected individuals become susceptible to a wide range of diseases. Besides endangering human health, aflatoxin contamination seriously affects the export potential of high-value commodity crops, such as edible nuts and spices like turmeric and chillies, which could provide an important source of income for farmers.

Competition

India is facing stiff competition from other producing countries like Guatemala that supply cardamom in whole form. Most of these countries have no domestic market for the spices they are producing, forcing them to sell their produce even at cost price.

16. Government incentives and policies to promote the production and exports

Union Government through Spices Board has been implementing various programmes/ schemes under the Integrated Scheme for Export Promotion and Quality Improvement in Spices, and, Research and Development of Cardamom to increase the income of cardamom farmers which include, increasing production and productivity of cardamom through production of quality planting materials in the growers field, replanting of old, senile and uneconomic gardens, new planting of cardamom (large) in Arunachal Pradesh and Nagaland, assistance for farm mechanization to address the labour problem and to reduce the cost of production, supply of Good Agricultural Practice (GAP) kits to cardamom (small) growers to improve the quality of cardamom to get higher price for growers, promotional measures to increase the domestic consumption of cardamom,aggregation of farmers by promoting the formation of Spices Producer Societies for common processing, value addition, direct marketing etc.for better price realization,setting up of e-auction centres for cardamom(small) to ensure transparency and better price for cardamom to the growers etc. Further, to protect the interest of domestic cardamom industry and to control the import of inferior quality cardamom from other origins, the Government had fixed the Minimum Import Price (MIP) of Cardamom at Rs. 500 per kg vide Notification dated the 6th February,2015 as there was drastic fall in the price of cardamom (small). Measures taken by the Government to boost export of cardamom and other spices include development of infrastructure for common processing facilities in Spices Parks, adoption of Hi-Tech in spice processing , technology and process upgradation, setting-up/up-gradation of in-house quality evaluation labs, study of markets abroad, product development and research, pre-export analytical tests for meeting the quality specifications of consumer countries, assistance to farmers for post-harvest quality improvement in spices, trade promotion activities including participation in international fairs, promotion of Indian spice brands, conducting training programmes for the stakeholders in Good Agricultural Practices etc.

17. Conclusions

India stands third in the list of the top cardamom producing countries but it is nowhere in the list of top exporting countries of this commodity because around 80% of the cardamom produced is consumed domestically. There are a number of schemes and policies going on to promote the production and export of cardamom but since the farmers are unaware of these schemes, they aren't able to take any advantage of these policies. Indiscriminate use of chemicals by the indian farmers results in pesticide residues beyond tolerable limits, leading to rejection of many consignments of spices from India. Precision is to be adapted to overcome this issue of rejection of export quality produce.

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