MCX
METAL & ENERGY
Trade with Trust

CARDAMOM
PERFORMANCE REVIEW



2019-2020

FOREWORD TO THE CARDAMOM PERFORMANCE REVIEW

The Cardamom Performance Report (PR) is the outcome of the SEBI circular SEBI/HO/CDMRD/DNPMP/CIR/P/2020/21 dated February 04, 2020 directing all recognised Stock Exchanges offering commodity derivatives segment to create a 'Performance review of the commodity derivatives contracts'. The PR, based on SEBI directive, has to be uploaded on the Exchange website by June 30, 2020 after consultation with the respective Product Advisory Committee (PAC).

Following the above directive the Agri - Product Management Team (PMT) at the Exchange has created PRs for all the listed Agri products. These have since been prepared in consultation with the respective Commodity/Commodity Complex PACs.

The Cardamom Performance Report highlights the important aspects of the trade like the domestic and international supply, import and export statistics, etc. There is also extensive information on the volume, turnover, open interest, deliveries of Cardamom on the Exchange, along with the price correlations with auction markets and hedging efficiency to help the market participants get an empirical understanding of the performance of the Cardamom contract on the Exchange.

Acknowledgement

We have been ably guided by the MCX Spices Complex PAC members in improving the content of the report and we are extremely thankful to them. We hope to keep improvising the report going forward.

1. **Background**
    a. **Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India**

Brief about Cardamom

The origins of cardamom are unknown, yet it is believed that it grew as wild herbs in the monsoon forests of the Western Ghats in southern India. Cardamom finds its first mention in the Charak Samhita (an early text on Ayurveda) written somewhere between 2nd century BC and 2nd century AD. The Charak Samhita says that cardamom is an important constituent in many medicines. Later, the spice finds mentions in many Sanskrit texts as being used in rituals and ceremonies.

Small cardamom is grown in India, commercially in plantations, under the shade of tall forest trees at moderately high altitudes in the evergreen forests of the Western Ghats. India is a major producer and consumer of cardamom, holding the second spot in world production; Guatemala taking the top slot. With no domestic consumption, Guatemala also becomes the largest exporter in the world.

Cardamom is widely used as spice, renowned for its flavour and aroma. In south Asia, green cardamom is largely used in traditional Indian sweets and in the making of tea; in Arabia it is used in the preparation of 'gahwa'—a strong cardamom coffee that is used to welcome guests; in northern Europe, it is an essential ingredient in sweet foods. Therapeutically, Cardamom finds varied uses, such as in the treatment of teeth and gum infections, digestive disorders, throat trouble, and skin problems. Cardamom is also used for making perfumes, Massage Oils, etc.

Sample Picture of Cardamom



Lifecycle

Cardamom is a perennial plant. However, plants are removed & new plants are re-planted after 8 years approximately, as yields start dipping after 5-6 years. Cardamom plants normally start bearing fruits two years after planting.

The major production season in India is from August to March / April (peak season: Sep – Jan.). Season commencement can be early / late depending on monsoon. During Sep-Jan, plucking can be done every 40-45 days. Apart from that plucking is done every 90 days. Plant requires intermediate rains with periods of good sunshine for good yields.

Varieties/Grade of Cardamom

There are three distinctive types of Cardamom grown in India, namely Malabar, Mysore and Ceylon wild. The Malabar type also known as Alleppy green Cardamom is famous and preferred. It is the best grade available in the world. Indian Cardamom is slightly smaller but more aromatic. Two varieties of Cardamom plants are identified, and they are *Elettaria cardmomum maton* variety which is the major variety comprising of wild indigenous types from Sri Lanka and *Eletrraria cardamomum Maton* variety which is the minor variety comprising of indigenous types like Mysore, Malabar and Vazhukka. These types are grown in different tracts and are mostly identified based on the nature of panicles, size of plants and other morphological characters. Cardamom varieties are highly location specific.

The quality parameters of Cardamom include colour, maturity of seeds, percentage of seeds, percentage of seed counts and litre weight (gms).These are the major criterias used in the market.

b. Commodity fundamentals and balance sheet as per the following format (to be prepared based on publicly available information on best effort basis):

Table – Fundamentals & Balance sheet

Global Scenario (MT)	2018-19	2019-20
Opening Stocks	NA	NA
Production	45,000 – 47,000	42,000 – 45,000
Others (If any)	NA	NA
Consumption	NA	NA
Closing stocks	NA	NA
Source – Market sources **NA – Not available**		

Indian Scenario (MT)	2018-19	2019-20*
Opening Stocks*	500 – 1000	0-500
Production	12,940	12,000 - 14,000
Imports*	1,500 - 2500	2,000 - 2,500
Total Supply	14,440 – 15,440	14,000 – 16,500
Exports	2,850	0 – 1000
Domestic consumption*	13,000	14,000
Closing stocks*	0-500	500 – 1000
Source - Spices Board of India and market sources; * - Market Sources		

Top major producing countries (MT)	2018-19	2019-20*
Guatemala*	30, 000 – 32,000	28,000 – 30,000
India	12,940	12,000 – 14,000
Source - Spices Board of India and market sources; * - Market Sources **Guatemala & India constitute major portion of the global production**		

Top major consuming countries (MT)	2018-19	2019-20*
NA	NA	NA
NA – Not available		

Top major exporting countries (MT)	2018-19	2019-20*
Guatemala*	33,000	36,600
India	2,850	0 – 1000
Source - Spices Board of India and market sources; * - Market Sources		

Top 10 major importing countries (MT)	2018-19	2019-20
UAE	1190.79	NA
Kuwait	660.48	NA
Iran	217.54	NA
Saudi Arabia	120.68	NA
USA	117.64	NA
Qatar	54.50	NA
Oman	49.75	NA
Singapore	43.66	NA
UK	27.83	NA
Canada	25.24	NA
Source – Spices board of India, (Importing nations of Indian Cardamom) **NA – Not available**		

Top major producing states in India (MT)	2018-19	2019-20*
Kerala	11,535	10,500 – 12,500
Karnataka	690	750
Tamil Nadu	715	750
Source - Spices Board of India and market sources; * - Market Sources		

c. Major changes in the polices governing trade in the spot markets of the commodity

Due to the recent floods in Kerala for consecutive years the productivity and quality parameters of Cardamom have suffered substantially. The production statistics are as below;

(In MT)	2016-17	2017-18	2018-19	2019-20 (E)
Production	17,990	20,640	12,940	12,000 – 14,000

Source – Spices Board and market estimates, 2019-20 – Market sources

As it can be seen, the production has gone down significantly. In turn, the quality of the crop available in the Idukki region has also been affected.

Cardamom auctions have stopped from 19th March, 2020 due to the national lockdown. April is usually a lucrative period for Indian Cardamom exports due to the festive demand of Ramadan from Middle Eastern countries, however the same could not be capitalized upon. The Cardamom auctions resumed from 28th May, 2020.

d. Geo political issues in the commodity and its impact on Indian scenario.

The Middle Eastern nations who are the major importing nations of Indian Cardamom insisted on Organic/Free from pesticide Cardamom from India, this has dealt a huge blow to the Indian exports market. The drop in exports can be seen as below;

(In MT)	2016-17	2017-18	2018-19	2019-20*(E)
Exports	3850	5680	2850	0 – 1000

Source – Spice Board of India, * - Market sources

However, with the recent changes where Saudi will be accepting CODEX standards for imports from India, this might increase the exports from India in the forthcoming period.

2. Trading related parameter

a. Monthly and Annual traded volume (quantity in appropriate units)

Month	Traded Quantity (MT)
APR'19	84.1
MAY'19	122.9
JUN'19	116.1
JUL'19	123.7
AUG'19	157
SEP'19	126.4
OCT'19	116.4
NOV'19	99
DEC'19	59.9
JAN'20	63.3
FEB'20	46
MAR'20	32
2019-20	**1146.8**

b. Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

	Annual traded volume (MT)	Deliverable Supply (MT)
2019-20	1146.8	14000
Annual traded volume as proportion of deliverable supply	8.2%	

c. Annual traded volume as proportion of total annual production (quantity in appropriate units)

	Annual traded volume (MT)	Production (MT)
2019-20	1146.8	12000
Annual traded volume as proportion of production	9.6%	

d. Annual average Open interest as proportion of total production

	Annual average Daily OI (MT)	Production (MT)
2019-20	17.7	12000
Annual average OI as proportion of production	0.1%	

e. Annual average Open interest as proportion of total deliverable supply

	Annual average Daily OI (MT)	Deliverable supply (MT)
2019-20	17.7	14000
Annual average OI as proportion of deliverable supply	0.1%	

f. Monthly and Annual value of trade (in Rs. Crores)

Month	Volume (Rs Crs)
APR'19	14.51
MAY'19	26.65
JUN'19	27.25
JUL'19	35.44
AUG'19	50.65
SEP'19	34.33
OCT'19	31.68
NOV'19	26.23
DEC'19	18.90
JAN'20	24.70
FEB'20	15.39
MAR'20	7.59
2019-20	313.31

g. Monthly and Annual quantity of delivery (in appropriate units)

Month	Deliveries (MT)
APR'19	0
MAY'19	0
JUN'19	0
JUL'19	0
AUG'19	0
SEP'19	0.5
OCT'19	0
NOV'19	0
DEC'19	0
JAN'20	1.5
FEB'20	2.2
MAR'20	2.9

2019-20	7.1

h. Monthly and Annual value of delivery (in Rs. Crores)

Month	Deliveries (MT)	Actual settlement value (Rs Crs)
APR'19	0	0
MAY'19	0	0
JUN'19	0	0
JUL'19	0	0
AUG'19	0	0
SEP'19	0.5	0.16
OCT'19	0	0
NOV'19	0	0
DEC'19	0	0
JAN'20	1.5	0.56
FEB'20	2.2	0.77
MAR'20	2.9	0.74
2019-20	7.1	2.23

i. Monthly and Annual Average Open Interest (OI) (in appropriate units)

Month	Average Daily OI (MT)
APR'19	13.8
MAY'19	16.8
JUN'19	26.5
JUL'19	24.7
AUG'19	24.7
SEP'19	28.3
OCT'19	20.4
NOV'19	15.9
DEC'19	14.6
JAN'20	10.1
FEB'20	9.9
MAR'20	8.4
2019-20	17.7

j. Annual average volume to open interest ratio

	Average Volume (MT)	Average OI (MT)
2019-20	4.4	17.7
Annual average volume to open interest ratio	24.9%	

k. Total number of unique members and clients who have traded during the financial year

Cardamom (2019-20)	
Unique Members	**Unique Clients**
126	539

l. Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

Average weekly based data						Maximum Open Interest	
Avg Open Interest based weekly data	**Unit**	**FPOs/ Farmers/ VCPs/ Hedgers**		**% FPOs/ Farmers/ VCPs/ Hedgers**		**FPOs/ Farmers/ VCPs/ Hedgers**	
		Long	**Short**	**Long**	**Short**	**Long**	**Short**
13569.23	KGS	4153.85	5788.46	30.61	42.66	11100.00	8400.00

Note: Details are provided based on weekly disclosure on the Exchange website for the period October 2019 to March 2020 in line with SEBI circular no SEBI/HO/CDMRD/DNPMP/CIR/P/2019/08 Dated January 04, 2019 Based on the data provided by the members from time to time pertaining to Farmers/ FPOs, VCPs/ Hedgers.

m. Number of unique FPOs / farmers and VCPs/hedgers who traded in the financial year

Farmers/FPOs	Value Chain Participants (VCPs)
8	18

Based on the classification provided by the members as on March 31, 2020 for clients traded during FY 2019-20.

n. Algorithmic trading as percentage of total trading

Month	Algorithmic trading as a % of total trading
APR'19	0.06
MAY'19	0.08
JUN'19	0.05
JUL'19	0.00
AUG'19	0.00
SEP'19	0.00
OCT'19	0.00
NOV'19	0.00
DEC'19	0.00
JAN'20	0.00
FEB'20	0.00
MAR'20	0.00
2019-20	0.01

o. **Delivery defaults**
- Number of instances
- Quantity involved
- Value involved

Delivery default instances took place in 4 months in Cardamom in 2019-20.

Month	Delivery defaults (MT)	Default value (Rs Crs)
APR'19	0	0
MAY'19	0.1	0.026
JUN'19	0.1	0.027
JUL'19	0.1	0.034
AUG'19	0	0
SEP'19	0	0
OCT'19	0	0
NOV'19	0	0
DEC'19	0.3	0.089
JAN'20	0	0
FEB'20	0	0
MAR'20	0	0
2019-20	0.6	0.177

3. **Price movements**

a. **Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international futures price (wherever relevant comparable are available).**

Cardamom futures are only available in India.

b. **Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).**

Cardamom futures are only available in India. International spot prices of Cardamom are not available.

c. **Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.**

Correlation	
	Exchange Future Price
Domestic spot price (Exchange polled)	92%

Ratio of standard deviation	
	Exchange Future Price
Domestic spot price (Exchange polled)	1.06

d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

Cardamom futures are only available in India.

e. Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre.

Correlation	
	Exchange Polled spot price
Domestic spot price (Auction weighted Avg Price)	97.60%

f. Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility.

	Maximum Daily Volatility	Minimum Daily Volatility
Future price	4%	0%
Spot price	16.8%	0%

Methodology adopted for computing volatility -
Volatility in any particular trading day is calculated by the formula given below-
Volatility = LN (Price/Previous day's price)*100

g. Number of times the futures contract was in backwardation/contango by more than 4% for the near month contract in the period under review

	Near Month
Next Month	134 – Backwardation, 4 – Contango
Spot	122 – Backwardation, 11 – Contango

4. **Others parameters**

a. Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations.

Qualitative measure for Hedge effectiveness ratio:

Methodology: Critical terms match method has been adopted for the analysis.

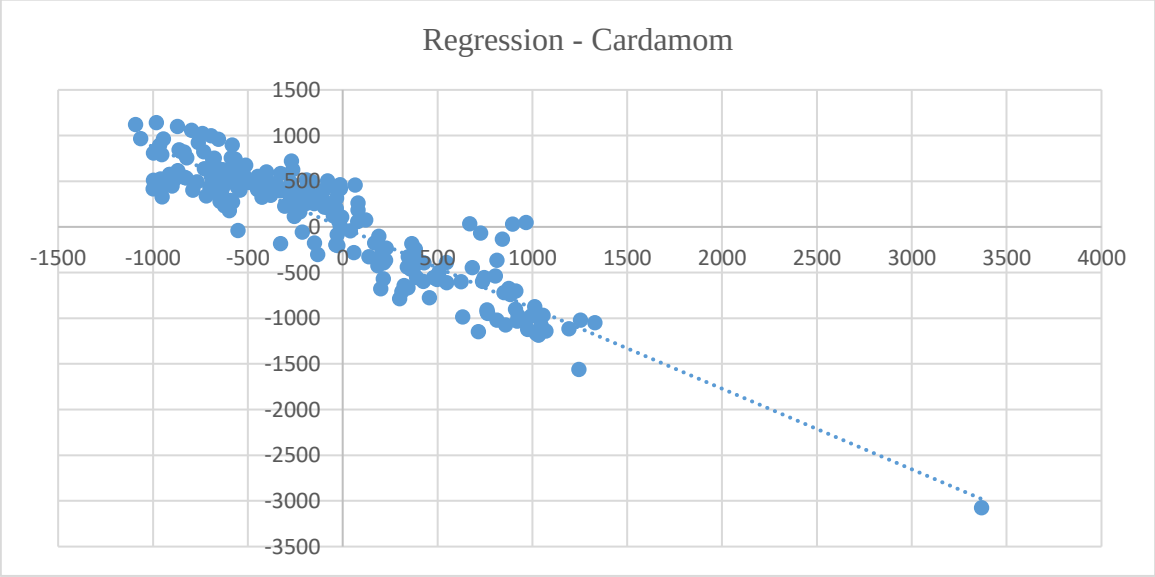
Change in 'average last three days price' of expiry month futures from its 'average three days price at beginning of the month' compared with corresponding average price of the spot.

	Cardamom Spot	Cardamom Futures
Apr'19	410.57	166.47
May'19	81.70	382.47
Jun'19	467.20	465.90
Jul'19	623.03	543.10
Aug'19	-1169.63	-996.47
Sep'19	12.63	374.37
Oct'19	-439.87	-608.33
Nov'19	238.80	264.43
Dec'19	698.83	783.30
Jan'20	199.97	-83.00
Feb'20	-615.50	-799.30
Average	46.16	44.81
%		**97.09%**

Quantitative measure for Hedge effectiveness ratio:

Methodology:

Weekly change in fair value of expected cash flow of hedging instrument (Cardamom - futures) regressed against expected cash flow of hedged item (Cardamom - Spot) to determine line of best fit and then goodness fit of the line was assessed i.e. correlation between Cardamom - futures and Cardamom - Spot was determined through statistical slope of the line and coefficient of correlation of the regression (R-squared).



R Square	0.84
Hedged Item – Change in fair value	**-0.88**

Hedge is generally considered to be highly effective if R-squared parameter is equal to or greater than 0.80 and the slope parameter (Hedged Item – Change in Fair value) is between -0.80 and -1.25.

Based on the above, it may be concluded that hedging in Cardamom futures is extremely effective.

Basis Risk (Volatility of Basis)

Methodology:

Basis = Spot price of the underlying – Near month futures price of the underlying

Volatility of basis: Standard deviation of daily 'basis/Spot'

Findings:
Average futures price (near month): Rs 2893.82 Per Kg
Average spot price: Rs 3068.16 Per Kg
Average basis: Rs. 174.34 Per Kg
Volatility of basis: 5.5%

b. Details about major physical markets of the commodity vis-à-vis market reach in terms of availability of delivery centers (information to be provided state-wise and UT-wise).

As per Spices board of India, the major physical markets are the entire Idukki region, Cochin, Thodupuzha - (Kerala); Saklashpur, Mercara, Medikeri, Mengaluru - (Karnataka); Mumbai - (Maharashtra); Delhi, Virudhunagar, Cumbum, Bodinayakanur, Thevaram, Pattiveerampatti - (Tamil Nadu).

The auction Centres are Puttady (Vandanmedu) & Bodinayakanur.

The delivery center for Cardamom is Vandanmedu which caters to the entire Idukki region, Bodinayakanur and surrounding areas. The market participants wanted the exchange to add an additional delivery in Bodinayakanur, however, due to the unavailability of WDRA approved Cold storage, Bodinayakanur could not be added as an additional delivery center.

c. Details about major physical markets of the commodity and average Open Interest for each month generated from those regions.

The major physical markets of Cardamom are as given above. The region wise Open Interest data is unavailable.

d. Details, such as number and target audience, of stakeholders' awareness programs carried out by the exchange.

The exchange conducted 17 programs specific to Spices in Kerala, Karnataka & Tamil Nadu. The target audience were the physical participants especially, the Farmers and Farmer Producing organisations (FPOs). The exchange reached out to close to 1400 participants through these events.

Overall, we conducted more than 80 programs in the Agri segment and we reached out to more than 20,000 participants across the value chain.

e. Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts.

The exchange strives to ensure that the contract remains a healthy replica of the physical market. We do one-on-one meetings and Product Advisory Committee (PAC) meetings with the physical market participants to make modifications in the contract to make it more lucrative for physical participants to participate in the contract.

In the case of Cardamom, based on market and PAC's feedback, we made changes in the quality specifications of the contract, to incline the contract further towards the current trends of the physical market and improve the hedging effectiveness of the contract.

5. Any other information to be disclosed as deemed important by the exchange or as suggested by the PAC.

No other information to be disclosed.

Disclaimer

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