

Performance Review of Commodity

CORIANDER

1. Background

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

Coriander is one of the most widely used spices in the world. It is one of those herbs whose all parts are edible; however, the commercial parts of the plant are its leaf and seed. Coriander oil is extracted from the crushed ripe coriander seeds by steam distillation, which yields 0.8 - 1.0% oil. Good quality oleoresin is also extracted from coriander seeds, which is been used for flavoring beverages, pickles, sweets, etc. Coriander Powder is also used as a flavoring agent in a number of pharmaceutical preparations, especially the digestive medicines.



Coriander is grown as a Rabi season crop in India. A dry and cold weather free from frost especially during flowering and fruit setting stage favours good grain production. The sowing period is from October to December. The crop gets ready for harvest in about 90 to 110 days depending upon the varieties and growing season. Harvesting generally takes place during February and April. Madhya Pradesh, Rajasthan and Gujarat are the important Coriander producing states in India.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sowing			Harvesting								

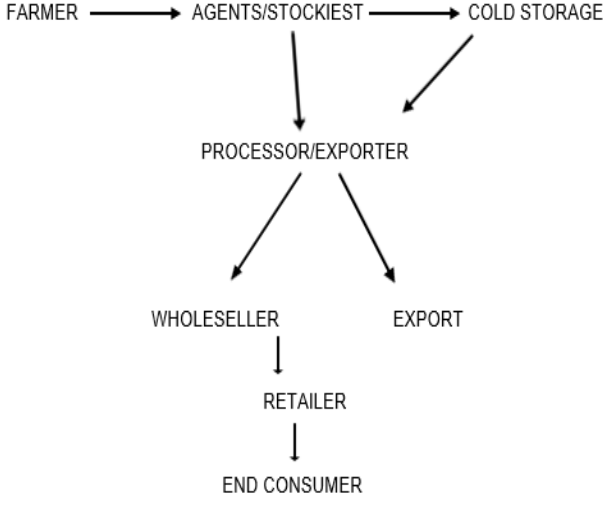
Life Cycle: Value Chain of the Commodity	Major Varieties /Grade
 <pre> graph TD F[FARMER] --> A[AGENTS/STOCKIEST] A --> CS[COLD STORAGE] CS --> PE[PROCESSOR/EXPORTER] PE --> W[WHOLESELLER] PE --> E[EXPORT] W --> R[RETAILER] R --> EC[END CONSUMER] </pre>	<p>Major Varieties</p> <p>Major varieties are Badami, Eagle, Scooter, Double Parrot, Single Parrot, and Super Green. Badami is the most prominent variety.</p> <p>NCDEX Quality Parameters</p> <p>Coriander to be necessarily machine cleaned</p> <ul style="list-style-type: none"> • Moisture – Basis 8% and acceptable upto 9%(Max) with 1:1 discount • Foreign Matter – Max 0.90% • Damaged & Discolored Seeds– Max 1.90% • Shriveled Seeds- Basis 1% Acceptable upto 1.5 % with 1:1 discount • Weevil seeds – Max 0.5% • Coriander splits (Dal) – Basis 5% and acceptable up to 9.50% with 1:0.5 discount • Live infestation – Not allowed

Table: Reference Years for Commodities

Sl. No.	A	B	C
Season	Kharif	Kharif (Long Duration crop)	Rabi
Crops	Paddy, Maize, Bajra, Moong, Soybean, Guar, Kapas, Sesame Seed	Castor and Turmeric	Wheat, Barley, Chana, RM Seed, Coriander, Jeera
Relevant Processed commodities	Guargum, Soybean meal, Soy oil, Cotton, Cotton seed Oil cake, Gur, CPO	-	-
With Reference to Production Year (PY) 2019-20 (July to June)			
Marketing Year (MY)	Oct 2019 to Sep 2020	Jan/Feb 2020 to Dec/Jan 2020/21	Mar/Apr 2020 to Feb/Mar 2021
Financial Year (FY)	April 2019 - March 2020	April 2020 - March 2021	Apr 2020 to Mar 2021
Calendar Year (CY)	Jan 2019 to Dec 2019	Jan 2020 to Dec 2020	Jan 2020 to Dec 2020
Relationship b/w Reference Years	Production Year = Marketing Year = Financial Year = Calendar Year	Production Year is previous year. Marketing Year = Financial Year = Calendar Year	Production Year is previous year. Marketing Year = Financial Year = Calendar Year
Example	PY 2019-20=MY2019-20=FY2019-20=CY2019	PY 2019-20 MY2020-21=FY2020-21=CY2020	PY 2019-20 MY2020-21=FY2020-21=CY2020

Explanatory Notes:

- India is a vast country and various crops are sown and harvested at different point of time. However, two major crop seasons, are there i.e. Kharif & Rabi. Apart from it, Zaid/Summer season is also there.
- Crop seasons are classified based upon sowing time. Normally Kharif season sowing starts from mid-June/July and new crop arrivals begin from Oct/Nov. However, early/late sowing/harvesting also takes place. Rabi season sowing usually takes places mainly from October/November and harvesting starts from March/April. Early/late sowing/harvesting also takes place.
- Summer crops/Zaid crops are short duration crops mainly sown during January-March and harvested during April-June.
- Production Year is considered as July to June and it remains same for all crops.
- Marketing Year starts from beginning of the new crop arrivals. Thus, for Kharif crops Marketing Year is generally considered as October to September, while for Rabi crops Marketing Year is April to March. However, Marketing Year may vary slightly for some of the crops depending upon early/late maturity/harvesting.
- For processed commodities, their production starts after the start of new season crop arrivals of their underlying crop.

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 (quantity)

(In Lakh Tonnes)

Global Scenario	Previous FY (2019-20)*	Current FY (2020-21)* (P)
Opening Stocks	NA	NA
Production	NA	NA
Imports	2.52	0.92
Total Supply	NA	NA
Exports	1.58	0.89
Domestic Consumption	NA	NA
Ending Stocks	NA	NA

Source: UN Comtrade (May 2021); HS codes used are 090921 and 090922

NA: Data is not available in the public domain; P: Provisional;

*Data is not available as per financial year. It is provided as per Calendar Year (CY) (Jan-Dec);

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

(In Lakh Tonnes)

Indian Scenario	Previous FY (2019-20)	Current FY (2020-21) (P)
Opening Stocks	NA	NA
Production	6.00	7.56
Imports	0.12	0.09
Total Supply	NA	NA
Exports	0.47	0.51
Domestic Consumption	NA	NA
Ending Stocks	NA	NA

Source: Production: Spices Board of India and Import/Export: Ministry of Commerce (HS codes 090921 and 090922); For FY 2020-21, import and export data is available only for period of Apr 2020 to Feb 2021; P: Provisional; NA: Data is not available in the public domain

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

(In Lakh Tonnes)

Rank	Top 10 Major Producing Countries			Top 10 Major Consuming Countries		
	Country	Previous FY	Current FY	Country	Previous FY	Current FY
	NA			NA		

Data is not available in public domain. As per market feedback, India is considered as the largest producer and consumer of Coriander in the world. It contributes around 80% in the total world production. Besides India, major coriander producers are Morocco, Canada, Pakistan, Romania and the former Soviet Union. However, official estimates are rarely available for this crop in most producing countries.

(In Lakh Tonnes)

Rank	Top 10 Major Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2019-20)*	Current FY (2020-21)* (P)	Country	Previous FY (2019-20)*	Current FY (2020-21)* (P)
1	India	0.48	0.54	Pakistan	0.18	0.25
2	Italy	0.15	0.16	EU	0.08	0.13
3	Canada	0.04	0.04	Egypt	1.21	0.08

Rank	Top 10 Major Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2019-20)*	Current FY (2020-21)* (P)	Country	Previous FY (2019-20)*	Current FY (2020-21)* (P)
4	Spain	0.03	0.03	USA	0.06	0.07
5	Poland	0.02	0.03	UK	0.05	0.07
6	Romania	0.01	0.02	India	0.06	0.06
7	Germany	0.01	0.01	South Africa	0.05	0.06
8	USA	0.01	0.01	Japan	0.02	0.05
9	Netherlands	0.01	0.01	Poland	0.03	0.04
10	Myanmar	0.01	0.01	Malaysia	0.02	0.03
	Others	0.80	0.02	Others	0.76	0.09
	World Total	1.58	0.89	World Total	2.52	0.92

Source: UN Comtrade (May 2021); HS codes used are 090921 and 090922; P: Provisional;

*Data is not available as per financial year. It is provided as per Calendar Year (CY) (Jan-Dec);

Countries are arranged in descending order based on the data in the Current Year;

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

(In Lakh Tonnes)

Top 10 Major producing states in India			
Rank	States	Previous FY (2019-20)	Current FY (2020-21) (P)
1	Madhya Pradesh	3.78	3.71
2	Rajasthan	0.89	1.76
3	Gujarat	0.45	1.17
4	Assam	0.31	0.33
5	West Bengal	0.15	0.15
6	Orissa	0.11	0.11
7	Uttar Pradesh	0.05	0.05
8	Andhra Pradesh	0.00	0.02
	Others*	0.25	0.26
	Total	6.00	7.56

Source: Spices Board of India; P: Provisional

States are arranged in descending order based on the data in the Current Year;

*: The share of other states (except for top 8 states) in total domestic production is negligible.

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

c. Major changes in the policies governing trade in the spot markets of the commodity (FY 2020-21)

Date	Major Policies Governing Trade and related Changes
14-Apr-20	The nation-wide lockdown amid outbreak of COVID-19 was extended till May 03, 2020
15-Apr-20	Despite the extension of lockdown, restrictions on certain agriculture related activities were eased effective from Apr 20, 2020.
06-May-20	In addition to existing cess, the Govt. of Rajasthan imposed a 2% Krishak Kalyan Fee on agricultural produce traded in mandis. In protest, mandis remained closed till May 14, 2020.
17-May-20	The nation-wide lockdown amid outbreak of COVID-19 was extended till May 31, 2020
05-Jun-20	Approval to three ordinances--amendment to the Essential Commodities Act, and two central laws on inter-state trade of farm produce, and contract farming

Date	Major Policies Governing Trade and related Changes
28-Sep-20	The three farm bills that were passed in the Parliament during Sep 15 to 22, 2020 received Presidential Assent amid nationwide farmers' protest, thus thus converting them into Laws.
13-Oct-20	FSSAI has notified the Food Safety and Standards (Food Products Standards and Food Additives) Eighth Amendment Regulations, 2020, related to microbiological requirements for spices and herbs. Food Business Operators shall comply with all the provisions of these regulations by July 1, 2021, says the notification.
29-Dec-20	FSSAI asked state food commissioners to conduct effective enforcement drive to check adulteration in spices in wholesale markets/mandis under their jurisdictions in the wake of media reports about sale of adulterated spices in the domestic market. As per one such report, the spices like dhaniya powder is being adulterated with bajra and dhaniya stem.
11-Jan-21	The Supreme Court stayed the implementation of the three Farm Acts 2020 and constituted a four-member committee to make recommendations on the same. The panel was given two months' time to submit its report for a 'fair, equitable and just solution'.
Mar-21	Various states Govt. imposed local lockdown during the month of March 2021 amid second wave of Covid, led to closure of physical markets.

d. Geo political issues in the commodity and its impact on Indian scenario (FY 2020-21)

Date	Event	Key Details	Key Implications/Impact
17-Jun-20	India-China border tensions	Twenty army personnel were killed during a violent confrontation with Chinese troops in the Galwan Valley in eastern Ladakh	Trade relations with China got adversely affected.

2. Trading Parameters

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

Monthly Traded Volume	
Month	Traded volume (MT)
Apr-20	27,110
May-20	34,520
Jun-20	46,420
Jul-20	37,970
Aug-20	29,035
Sep-20	28,500
Oct-20	21,225
Nov-20	23,105
Dec-20	21,225
Jan-21	12,575
Feb-21	17,250
Mar-21	50,500
Yearly Traded Volume	349,435

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

Traded volume (MT)	Deliverable supply(MT)	Proportion
349,435	727,830	48.01%

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

Traded volume (MT)	Production(MT)	Proportion
349,435	702,980	50%

d. Annual average Open interest as proportion of total production

Avg Open Int (MT)	Production(MT)	Proportion
4,552	702,980	0.65%

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

Avg Open Int (MT)	Deliverable supply(MT)	Proportion
4,552	727,830	0.63%

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

Monthly Traded Volume	
Month	Traded Value(in Cr.)
Apr-20	164
May-20	198
Jun-20	271
Jul-20	241
Aug-20	195
Sep-20	192

Oct-20	143
Nov-20	152
Dec-20	129
Jan-21	75
Feb-21	117
Mar-21	363
Yearly Value of Trade	2,238

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

Monthly Delivery Quantity	
Month	Total Delivery(MT)
Apr-20	880
May-20	290
Jun-20	570
Jul-20	515
Aug-20	940
Sep-20	470
Oct-20	620
Nov-20	1,615
Dec-20	830
Jan-21	1,090
Yearly Delivery Quantity	7,820

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

Monthly Delivery Value	
Month	Value in Cr
Apr-20	5
May-20	2
Jun-20	3
Jul-20	3
Aug-20	6
Sep-20	3
Oct-20	4
Nov-20	11
Dec-20	5
Jan-21	7
Yearly Delivery Value	49

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

Monthly Average OI	
Month	Avg Open Int (MT)
Apr-20	5,417
May-20	3,885
Jun-20	4,255
Jul-20	4,114
Aug-20	4,872
Sep-20	5,025
Oct-20	4,233
Nov-20	4,744

Dec-20	3,975
Jan-21	2,743
Feb-21	2,929
Mar-21	8,065
Yearly average OI	4,552

j. Annual average volume to open interest ratio

Volume to OI Ratio
0.30

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

Member Count	Client Count
169	1397

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

	VCPs/ Hedger
Annual Average	11.44%
Maximum Daily value	11.82%

****It is calculated on the day when commodity has highest open interest during the year.***

****Commodity wise client categorization is as per category details as provided by the members.***

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

Commodity	Count
DHANIYA	28

****Commodity wise client categorization is as per category details as provided by the members.***

n. Algorithmic trading as percentage of total trading

Commodity	%
DHANIYA	13.53%

o. Delivery defaults

NIL

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).

NA

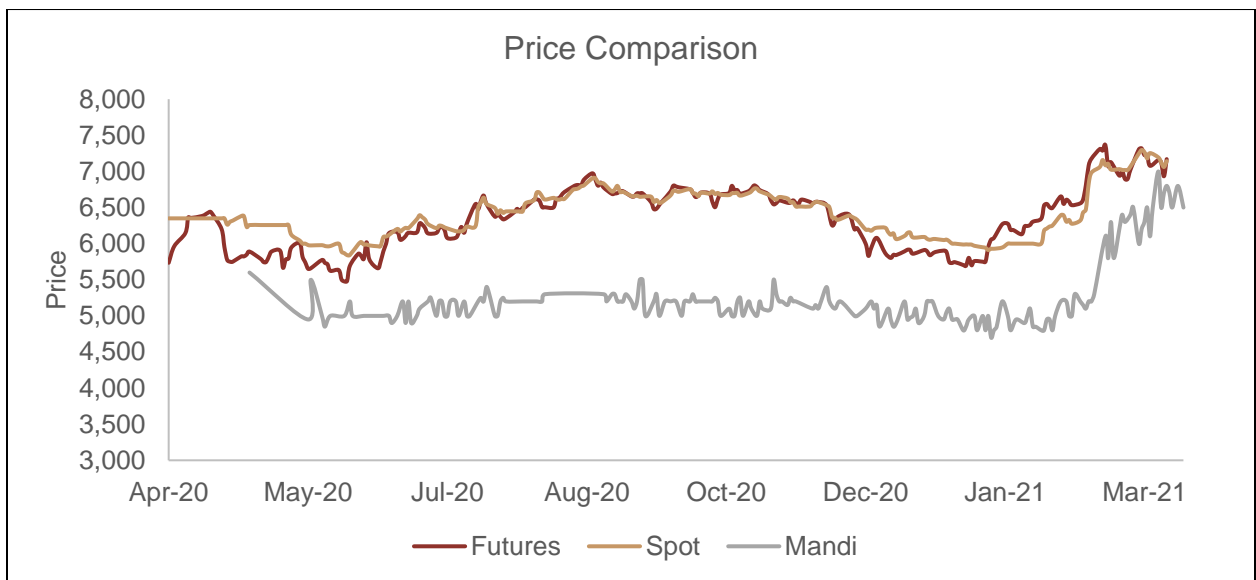
- b. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

NA

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

Correlation			
	<i>Futures</i>	<i>Spot</i>	<i>Mandi</i>
Futures	1		
Spot	0.365	1	
Mandi	0.096	-0.021	1

Standard Deviation			
	<i>Futures</i>	<i>Spot</i>	<i>Mandi</i>
Futures	1	0.595	2.425
Spot	1.681	1	4.077
Mandi	0.412	0.245	1



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

NA

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

Correlation			
	<i>Futures</i>	<i>Spot</i>	<i>Mandi</i>
Futures	1		
Spot	0.365	1	
Mandi	0.096	-0.021	1

Standard Deviation			
	<i>Futures</i>	<i>Spot</i>	<i>Mandi</i>
Futures	1	0.595	2.425
Spot	1.681	1	4.077
Mandi	0.412	0.245	1

- f. Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility. (**Volatility calculated by Standard Deviation of daily returns for the period from 1 April 2020 to 31 March 2021**)

Volatility	Futures		Spot	
	Month	Value	Month	Value
Max	April	0.021	Feb	0.015
Min	Aug	0.008	Jan	0.003

- 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

Contango	19
backwardation	11

4. Other Parameters

a. Qualitative and quantitative measure for Hedge effectiveness ratio (**Methodology in Annexure I**) and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations. **(Volatility calculated by Standard Deviation of daily returns for the period from 1 April 2020 to 31 March 2021)**

Basis Volatility	57.75
Hedge Efficiency	48.64%

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

State	Major Physical Markets	Availability of NCDEX Delivery centre
Rajasthan	Baran	
	Jhalawar(Bhawani Mandi)	
	Kota	Basis
	Bundi	
	Ramaganj Mandi	ADC
Madhya Pradesh	Mandsaur	
	Neemuch	
	Guna	
	Binangunj	
	Biaora	
	Kumbhraj	
Gujarat	Junagadh	
	Gondal	ADC
	Rajkot	

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

Note – The OI for each month is classified based on the Member level. The Average OI is on gross level (Long OI + Short OI)

State	GUJARAT (in MT)	MADHYA PRADESH (in MT)	RAJASTHAN (in MT)
Apr-20	2,008	838	3,376
May-20	1,397	661	2,109
Jun-20	1,365	770	2,253
Jul-20	1,467	860	1,347
Aug-20	1,650	778	1,717
Sep-20	1,610	623	1,530
Oct-20	1,416	366	1,844
Nov-20	1,212	298	2,083
Dec-20	1,204	70	1,318
Jan-21	877	27	1,164
Feb-21	1,435	104	1,186
Mar-21	4,316	590	2,789

"Note - The OI for CP is not mapped to any State/ location and hence not considered in the above data."

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

Following is the list of Awareness program, Stakeholder engagement program exchange has conducted for FY 2020-21. Due to the pandemic, all the programs were conducted on virtual platforms.

IEP/ RS	Category	Number of Participants
Investor Awareness Program	All market participants	33
Investor Awareness Program	All market participants	21
Investor Awareness Program	All market participants	59
Investor Awareness Program	All market participants	58
Investor Awareness Program	All market participants	174
Investor Awareness Program	All market participants	188
Investor Awareness Program	All market participants	104
Investor Awareness Program	All market participants	46
Investor Awareness Program	All market participants	111
Investor Awareness Program	All market participants	50
Investor Awareness Program	All market participants	14
Investor Awareness Program	All market participants	5
Investor Awareness Program	All market participants	10
Investor Awareness Program	All market participants	10
Investor Awareness Program	All market participants	5
Investor Awareness Program	All market participants	8
Investor Awareness Program	All market participants	9
Investor Awareness Program	All market participants	4
Investor Awareness Program	All market participants	8
Investor Awareness Program	All market participants	5
Investor Awareness Program	All market participants	15
Investor Awareness Program	All market participants	28
Investor Awareness Program	All market participants	23
Investor Awareness Program	All market participants	15
Investor Awareness Program	All market participants	22
Investor Awareness Program	All market participants	20
Investor Awareness Program	All market participants	4
Investor Awareness Program	All market participants	26
Investor Awareness Program	All market participants	14

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

- Creating awareness about hedging and targeting the major Masala processors/ Traders/ Stockiest
- Awareness Programme in major trading centres as well as remote location
- One to one meeting with market participants and hedgers

ANNEXURE I

Qualitative and quantitative measure for Hedge effectiveness ratio

Hedging Efficiency Methodology

Regression analysis is carried out between near month futures returns and NCDEX polled spot prices returns of the FY2020-21.

The R-Square value of the Regression analysis represents the “**Hedging Efficiency**”.

Note: -

Date for which spot prices were not available is not used for analysis.

Weekly returns are used for performing Regression Analysis.

The method used to calculate Hedging Efficiency does not consider liquidity risk because of this reason illiquid commodities can have high hedging efficiency.

References:

Ghosh, Ph.D, Nilanjan & Dey, Debojyoti & Moulvi, Nazir & Jain, Niteen & Sinha, Neha & Rachuri, Sarika. (2013). Hedging Efficiency—Measures and Empirical Study.