ANNUAL PERFORMANCE REVIEW – TURMERIC

2022-2023

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1. Background

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

Turmeric is the boiled, dried, cleaned, and polished rhizomes of Curcuma longa. The plant is a herbaceous perennial, 60-90 cm high, with a short stem and tufted leaf. There are 7 to 12 leaves, the leaf sheaths forms the pseudo stem. The lamina is green above and pale green below and has a length of 30-40 cm and width 8-12 cm. Inflorescence is a central spike of 10-15 cm length. 1-4 flowers are born in axil of the bract opening one at a time. About 30 flowers are produced in a spike. Seeds are produced in capsules and there will be one to numerous sunken capsules in an inflorescence.

Source: Spices Board of India

Value Chain for Turmeric

Various grades of Turmeric Produced in India

There are about 30 turmeric varieties grown in India. Among them Alleppey and Madras (Perianadan) are of great commercial importance. Some of the improved varieties are: CO-11983, BSR-11986, Krishna, Roma, Suroma, Ranga, Rasmi, Megha Turmeric-1, Suguna, Sudarshana, Suranjana, Duggirala, Kodur, Suvarna, Varna, IISR Prabha, IISR Pratibha, Rajendra Sonia etc. In India most of the turmeric used is of dried variety, one of the best and popular variety is the 'Erode'. Other major varieties are Alleppey Finger' (Kerala) 'Rajapore' and 'Sangli turmeric' (Maharashtra), 'Nizamabad Bulb' (Andhra Pradesh).

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

Global Scenario		
(In lakh tonnes)	2021	2022
Opening Stock	-	-
Production	-	-
Imports	1.54	1.13
Total Supply	-	-
Exports	2.42	2.04
Consumption	-	-
Ending Stocks	-	-
Source: UN Comtrade		

Indian Scenario		
(In lakh tonnes)	2021-22	2022-23
Opening Stock	-	-
Production	12.22	11.61
Imports	0.24	0.17
Total Supply	12.46	11.78
Exports	1.53	1.70
Consumption	9.77	9.29
Ending Stocks	-	-
Source: Spices Board Of India		

Top 10 Major producing countries

Not Available

India is by far the largest producer and exporter of turmeric in the world. As per the market and various reports, India produces nearly entire whole world's crop and consumes `80% of it. The remaining ~20% is cultivated in China, Myanmar, Nigeria and Bangladesh

Top 10 Major consuming countries

Not Available

As per the market and various reports, India produces nearly entire whole world's crop and consumes ~80% of it.

Top 10 Major Exporting countries

Top 10 Exporting Countries (in Lakh tonnes)			
Country	2021	Country	2022
India	1.54	India	1.61
Madagascar	0.20	Myanmar	0.29
Myanmar	0.14	Netherlands	0.04
Indonesia	0.09	Fiji	0.03
Ethiopia	0.09	Germany	0.02
Viet Nam	0.07	Spain	0.01
Netherlands	0.04	USA	0.01
United Arab Emirates	0.04	China	0.01
Peru	0.04	France	0.00
Fiji	0.02	Belgium	0.00
Source: UN Comtrade			

Top 10 Major Importing countries

Top 10 Importing Countries (in Lakh tonnes)			
Country	2021	Country	2022
India	0.24	China	0.21
USA	0.13	India	0.19
China	0.09	USA	0.11
Malaysia	0.09	Morocco	0.11
Morocco	0.08	Netherlands	0.06
United Arab Emirates	0.08	Germany	0.05
United Kingdom	0.07	Japan	0.04
Netherlands	0.07	United Kingdom	0.04
Germany	0.06	South Africa	0.03
Saudi Arabia	0.05	Brazil	0.03
Source: UN Comtrade			

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Top 10 Major producing States in India

State wise Production in (lakh tonnes)			
State	2021-22	State	2022-23(P)
Maharashtra	3.68	Maharashtra	2.78
Telangana	2.17	Telangana	2.50
Tamil Nadu	1.25	Karnataka	1.30
Karnataka	1.10	Tamil Nadu	1.00
Andhra Pradesh	0.75	Madhya Pradesh	0.81
Madhya Pradesh	0.75	Andhra Pradesh	0.74
Orrisa	0.69	Orrisa	0.69
West Bengal	0.51	West Bengal	0.47
Mizoram	0.30	Mizoram	0.30
Assam	0.21	Assam	0.22
Gujarat	0.19	Gujarat	0.18
Source: Spices Board Of India			

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

There were no major policy changes issues which had any significant on Turmeric prices in India for financial year 2022-23

d) Geopolitical issues in the commodity and its impact on Indian scenario

There were no major geo political issues which had any significant on Turmeric prices in India for financial year 2022-23

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2. Trading related parameter

a) Monthly and Annual traded volume

Month	Traded Volume (In Kg)
Apr-22	1,46,70,000
May-22	1,53,00,000
Jun-22	1,53,80,000
Jul-22	1,77,70,000
Aug-22	1,73,10,000
Sep-22	1,83,10,000
Oct-22	1,06,60,000
Nov-22	58,70,000
Dec-22	57,70,000
Jan-23	37,60,000
Feb-23	24,00,000
Mar-23	20,40,000
Total	**12,92,40,000**

b) Annual traded volume as proportion of total deliverable supply: 10.97%

- Annual Traded Volume: 12,92,40,000 Kg
- Deliverable Supply: 1,17,77,93,000 Kg

c) Annual traded volume as proportion of total annual production: 11.13%

- Annual Traded Volume = 12,92,40,000 Kg
- Annual Production = 1,16,10,25,000 Kg

d) Annual average Open interest as proportion of total production: 0.0224%

- Annual Average OI = 2,60,000 Kg
- Annual Production = 1,16,10,25,000 Kg

e) Annual average Open interest as proportion of total deliverable supply: 0.0228%

- Annual Average OI = 2,60,000 Kg
- Deliverable Supply = 1,17,77,93,000 Kg

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f) Monthly and Annual value of trade

Month	Value of Trade (In Rs. Crores)
Apr-22	134.45
May-22	125.20
Jun-22	122.45
Jul-22	140.69
Aug-22	127.89
Sep-22	130.13
Oct-22	78.08
Nov-22	44.45
Dec-22	46.39
Jan-23	29.66
Feb-23	17.13
Mar-23	14.13
Total	**1,010.65**

g) Monthly and Annual quantity of delivery

Month	Quantity of Delivery (In Kg)
Apr-22	-
May-22	-
Jun-22	-
Jul-22	-
Aug-22	-
Sep-22	-
Oct-22	-
Nov-22	-
Dec-22	-
Jan-23	-
Feb-23	-
Mar-23	-
Total	**-**

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h) Monthly and Annual value of delivery

Month	Value of Delivery (In Rs.)
Apr-22	-
May-22	-
Jun-22	-
Jul-22	-
Aug-22	-
Sep-22	-
Oct-22	-
Nov-22	-
Dec-22	-
Jan-23	-
Feb-23	-
Mar-23	-
Total	**-**

i) Monthly and Annual Average Open Interest (OI)

Month	Monthly Average OI (In Kg)
Apr-22	2,60,000
May-22	2,60,000
Jun-22	2,60,000
Jul-22	2,60,000
Aug-22	2,60,000
Sep-22	2,60,000
Oct-22	2,60,000
Nov-22	2,00,000
Dec-22	2,30,000
Jan-23	2,60,000
Feb-23	2,60,000
Mar-23	2,60,000

Annual Average OI = 2,60,000 kg

j) Annual average volume to open interest ratio: 196.15%

- Average of Traded Volume: 5,10,000 Kg
- Average of Open Interest: 2,60,000 Kg

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

- Unique members = 6
- Unique clients = 6

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

30.05

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

-

n) Algorithmic trading as percentage of total trading

35.78

o) Delivery defaults

- **Number of instances** = Nil
- **Quantity involved** = Nil
- **Value involved** = 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)

Not Available

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)

Not Available

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

The correlation between Exchange futures and Exchange Spot Prices was 0.8705

The ratio of Standard Deviation was 2.32

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

Not Available

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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

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

Commodity	Max of Daily Futures Price Volatility %	Min of Daily Futures Price Volatility %	Max of Daily Spot Price Volatility %	Min of Daily Spot Price Volatility %
Turmeric	11.12%	-6.99%	2.46%	-2.97%

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

- **Instances of Contango** – 30
- **Instances of Backwardation** – 0

4. Other's 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.

Hedge Effectiveness for FY 2022-23

Commodity	Hedge Efficiency
Turmeric	75.77%

Note: Hedging efficiency is the 'R Square' value of the regression equation between BSE futures prices and BSE polled spot prices during the financial year.

Basis Risk for FY 2022-23

Commodity	Unit	Average Return of Basis(unit)	Standard deviation
Turmeric	Rs/Qtl	3	34.18

- ***Note: Basis Risk is computed as the Standard deviation of daily normal return in Basis, which is excess of Spot over Futures price.***

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)

Name of State	Name of the physical markets	Market Reach of Exchange delivery Centres
Telangana	Nizamabad, Warangal, Ksamudram, Vikarabad	Nizamabad -Basis Centre
Maharashtra	Sangli, Hingoli, Basmat, Nanded ,Jalgaon	Sangli, Basmat-Additional Delivery Centre
Tamil Nadu	Erode, Salem, Coimbatore	Erode-Additional Delivery Centre
Andhra Pradesh	Cuddapah, Duggirala	No Delivery Centre

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

Details about physical markets are given above. Region-wise open interest is not available

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

SNO	Program Type	Location	Participants
1	Turmeric Futures: A Perfect Tool to Hedge Volatility	Webinar	45
2	BSE Turmeric Futures: A Perfect Tool to Hedge Volatile Prices	Webinar	53

BSE has also organised more than 20 Traders meet exclusively for Turmeric in Nanded, Basmat and Nizamabad. Additionally business team has had one to one meeting conducted to create awareness among various value chain participants .

We have organized multiple awareness sessions in association with IMC Chamber of Commerce and Industry exclusively for Turmeric.

Exchange organised series of awareness session in association with Investor Protection Fund and National skill Foundation of India (NSFI) for Commodity Derivatives Segment. The topic for discussion included the following :

- Introduction to Commodity Exchange
- Introduction to Aggregation Principles

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

- BSE is conducting more awareness sessions and one to one meeting with members.
- Awareness sessions at Delivery Centres ,Additional Delivery Centre and various other potential centres and regions.
- Product Specific Seminars/Webinars .