

Parameters for Performance Review of Commodity

SOY REF OIL

1. Background

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

Soybean oil is a vegetable oil extracted from the seeds of the soybean (*Glycine max*). It is one of the most widely consumed cooking oils. As a drying oil, processed soybean oil is also used as a base for printing inks (soy ink) and oil paints. Per 100 g, soybean oil has 16 g of saturated fat, 23 g of monounsaturated fat, and 58 g of polyunsaturated fat. The major unsaturated fatty acids in soybean oil triglycerides are the polyunsaturated alpha-linoleic acid (C-18:3), 7-10%, and linoleic acid (C-18:2), 51%; and the monounsaturated oleic acid (C-18:1), 23%. It also contains the saturated fatty acids stearic acid (C-18:0), 4%, and palmitic acid (C-16:0) 10%.



Crop Cycle: N/A

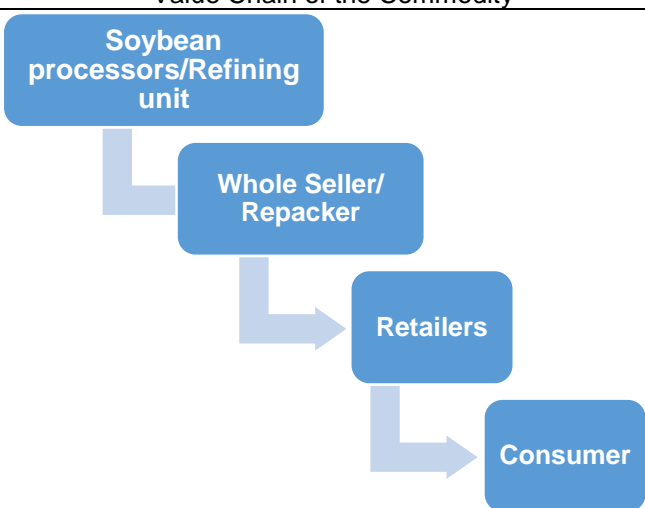
Life Cycle: Value Chain of the Commodity	Major Varieties /Grade
 <pre> graph TD A[Soybean processors/Refining unit] --> B[Whole Seller/Repacker] B --> C[Retailers] C --> D[Consumer] </pre>	<p>Major Varieties</p> <p>N/A</p> <p>NCDEX Quality Parameters</p> <p>Moisture & insoluble impurities, 0.10 % Max, Color: Lovibond Y+5R, 5^{1/4}" cell Max: 12 Unit, Refractive Index at 40C: 1.4650-1.4710, Specific Gravity at 30C 25/25: 0.917-0.921, Saponification Value: 189-195, Iodine Value (Wijs): 120-141, Unsaponifiable matter, % by mass, Max: 1.5, FFA, % Max: 0.25, Flash point, Pensky Martin Method, C, Min: 250, Acid Value – Not more than 0.50, Phosphorous – Not more than 0.02, Hexane – Not more than 5 ppm</p> <p>Test for argemone oil shall be negative. It shall be clear, free from rancidity, adulterants, sediments, suspended and any other foreign matter, separated water, added coloring and flavoring substances and mineral oil</p>

Table: Reference Years for Commodities

Sl. No.	A	B	C
Crop Season	Kharif	Kharif (Long Duration crop)	Rabi
Crops	Paddy, Maize, Bajra, Moong, Soybean, Guar seed, Kapas, Sesame Seed	Castor and Turmeric	Wheat, Barley, Chana, RM Seed, Coriander, Jeera
Relevant Processed commodities	Guar gum, Soybean meal, Soy oil, Cotton, Cotton seed Oil cake, Gur, CPO	Castor Oil	-
Sowing Time	July onwards	July onwards	October onwards
Harvesting Time	Oct onwards	Jan onwards	March onwards
Reference Year			
Financial Year 2021-22 (Apr-Mar)			
Corresponding Years			
Production Year (PY)	2021-22 (July-Sept)	2020-21 (July-June)	2020-21 (July-June)
Marketing Year (MY)	2021-22 (Oct-Sept)	2021-22 (Jan/Feb-Dec/Jan)	2021-22 (Mar/Apr - Feb/Mar)
Calendar Year (CY)	2021 (Jan-Dec)	2021 (Jan-Dec)	2021 (Jan-Dec)
Relationship b/w Various Years	Current Financial Year = Current Production Year = Current Marketing Year = Calendar Year	Current Financial Year = Previous Production Year = Current Marketing Year = Current Calendar Year	Current Financial Year = Previous Production Year = Current Marketing Year = Current Calendar Year
Example	FY 2021-22 = PY 2021-22 = MY 2021-22 = CY 2021	FY 2021-22 = PY 2020-21 = MY 2021-22 = CY 2021	FY 2021-22 = PY 2020-21 = MY 2021-22 = CY 2021

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 place 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”. With the start of monsoon rains during June/July the sowing of Kharif season starts and they are harvested during Sept/Oct. From Oct onwards the sowing of Rabi season crops starts and harvesting usually takes place during March/April. Thus, a single production cycle completes between July-Sept period covering Kharif, Rabi and Zaid crops. Thus production year remains same for all season crops and the period corresponds to July-Sept.
- “Marketing Year” for each crops starts from beginning of the harvest time i.e. from start of new crop produce arrivals in the market. Thus, for Kharif crops Marketing Year is generally considered as “October to September”, while for Rabi crops Marketing Year is considered as “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 (2020-21)	Current FY(2021-22) (P)
Opening Stocks	52	48
Production	592	590
Imports	118	119
Total Supply	761	757
Exports	126	124
Domestic Consumption	587	593
Closing Stocks	48	40

Source: USDA (April 2022); P= Provisional,

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 (2020-21)	Current FY(2021-22) (P)
Opening Stocks	1.42	1.50
Production	17.10	18.36
Imports	32.46	36.50
Total Supply	50.98	56.36
Exports	0.11	0.15
Domestic Consumption	49.37	54.00
Closing Stocks	1.50	2.21

Source: USDA (April 2022); P= Provisional,

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 (2020-21)	Current FY(2021-22) (P)	Country	Previous FY (2020-21)	Current FY(2021-22) (P)
1	China	167	160	China	178	173
2	United States	114	119	United States	106	114
3	Brazil	90	91	Brazil	80	75
4	Argentina	79	79	India	49	54
5	European Union	30	30	European Union	24	25
6	India	17	18	Argentina	20	21
7	Mexico	11	12	Mexico	13	13
8	Russia	8	8	Bangladesh	12	13
9	Egypt	7	7	Egypt	11	10
10	Thailand	5	5	Algeria	8	8
	Others	63	61	Others	86	87
	World Total	592	590	World Total	587	593

Source: USDA (April 2022); P= Provisional,

Countries are arranged in descending order based on the figure in Current FY (2021-22)

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 Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2020-21)	Current FY(2021-22) (P)	Country	Previous FY (2020-21)	Current FY(2021-22) (P)
1	Argentina	61	59	India	32	37
2	Brazil	13	18	China	12	11
3	European Union	11	11	Bangladesh	7	8
4	United States	8	8	Algeria	6	6
5	Russia	6	6	Peru	6	6
6	Bolivia	5	4	Morocco	5	5
7	Paraguay	6	3	European Union	5	5
8	Ukraine	2	2	Korea, South	4	4
9	Turkey	3	2	Egypt	4	4
10	Thailand	1	1	Colombia	3	3
	Others	11	11	Others	33	31
	World Total	126	124	World Total	118	119

Source: USDA (April 2022); P= Provisional,

Countries are arranged in descending order based on the figure in Current FY (2021-22)

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

Top 10 Major producing states in India

Top 10 Major producing states in India			
Rank	States	Previous FY (2020-21)	Current FY (2021-22) (P)
	NA	NA	NA

NA: Data is not available in the public domain.

It is a processed commodity. Thus, no such categorization is applicable for this commodity. Madhya Pradesh is the major Soybean producing state in the country contributing to nearly 46% percent of the total production, followed by Maharashtra 39% and Rajasthan 8% [Triennium Avg. (Crop Year 2018-19 to 2020-21)].

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

Date	Major Policies governing trade and related changes
19-May-21	The central government has directed states and UTs to monitor prices of 22 essential commodities, especially pulses, oilseeds, vegetables and milk in order to discourage hoarding activities and taking undue advantage of Covid-19 situation.
09-Jun-21	Government increased the MSP of Soybean for marketing season 2021-22 by 1.80% to 3950 Rs/mt. from 3880 Rs/mt. last year.
23-Jul-21	The Solvent Extractors' Association (SEA) of India asked the government to allow the import of soybean meal to help the domestic poultry industry to cool down the increased prices of Soy meal.
11-Aug-21	The Department of Animal Husbandry (DHAD) notified the Customs department that soymeal and oil cake from GM soy would be permitted for import.
16-Aug-21	The Ministry of Commerce in an Office Memorandum directed to facilitate import of 12 lakh tonnes of `GM Soya de-oiled cake with immediate effect.

24-Aug-21	The govt. relaxed the import policy rules to allow imports of 12 lakhs metric tonne of crushed and de-oiled GM soya cake (only non-living organism) from Nhava Sheva port and LCS Petrapole, till 31st October, 2021 or until further orders, whichever is earlier.
03-Sep-21	The Govt. allowed GM soya cake imports via Mumbai, Tuticorin and Vishakhapatnam Sea Ports in addition to Nhava Sheva Port.
13-Sep-21	The Govt. extended import window for Soymeal
08-Oct-21	The central govt. imposed stock limits on all Edible oils and oilseeds for the period Oct 08, 2021 till Mar 31, 2022. The stock limit will be decided by the respective States/UT on the basis of available stock and consumption pattern of the State/UT.
12-Oct-21	UP Govt. imposed stock limits on edible oil and oilseeds
25-Oct-21	The central govt. directed States and UTs to speed up the process of issuing stock limit notification before the festive season and ensure that the consumers get the benefit of the same.
23-Nov-21	Fisheries Ministry writes a letter to Commerce Minister to consider request of Poultry Breeder Association demand
24-Nov-21	Fisheries Ministry writes a letter to DGFT to consider request of Poultry breeder Association demand
26-Nov-21	The state govt. of Rajasthan imposed stock limits on Edible oils and oilseeds w.e.f. Nov 26, 2021 till Mar 31, 2022.
07-Dec-21	Maharashtra Deputy Chief Minister Mr. Ajit Pawar Letter to Mr. Piyush Goel-Commerce Minister regarding imposition of ban on import of soybean meal as it is hurting interest of the Maharashtra soybean farmers.
10-Dec-21	Ministry of consumer affairs held a meeting with Edible Oilseeds/Oil associations about passing the benefits of duty cut to the end consumers
19-Dec-21	Ministry of Finance, Department of Economic affair wrote to SEBI to suspend futures trading in Chana, mustard seed, crude palm oil, moong, paddy (Basmati), wheat and soybean and its derivatives with immediate effect.
20-Dec-21	SEBI in its press release (PR No 36/2021) directed suspension of futures and options trading for one year in a host of agricultural commodities including chana, mustard seed, crude palm oil, moong, paddy (Basmati), wheat and soybean and its derivatives. The suspension of trading in these commodities came into effect on Monday (20-Dec) following a communication from the Department of Economic Affairs. No fresh positions (including intra-day) will be allowed in respect of Futures and Options contracts of these commodities. No new Futures and Options contracts will be launched till further notice in any of the commodities.
23-Dec-21	Maximum stock of 90 days' production of Soya Meal, as per daily input production capacity of Plant/Miller/Processor, defined in its IEM (The storage location should be declared). Trading company/Trader/Private Chaupals: Only Government registered enterprise, maximum stock of 160 MT with a defined and declared storage location.
23-Dec-21	Govt. released Gazette notification on Incorporation of Soymeal under the Essential Commodities Act, 1955 with immediate effect and this shall remain in force for a period up to 30th June, 2022 from the date of its publication in the Official Gazette.
03-Feb-22	Department of Food and Public Distribution has issued a stock limit notification (S.O. 452(E)) on oilseed and edible oil. Govt. has imposed stock limit on edible oil and oil seed with specified quantity till 30th June 2022. However, six states, Uttar Pradesh, Karnataka, Himachal Pradesh, Telangana, Rajasthan and Bihar are exempted from the quantities specified, as they have already imposed stock limit.
30-Mar-22	Department of Food and Public Distribution has issued a stock limit notification (S.O. 1509(E)) on oilseed and edible oil. Govt. has extended stock limit period on edible oil and oil seed with specified quantity from June 30, 2022 to 31st Dec 2022. In the notification govt. has also directed that that Edible Oils and Edible Oilseeds

	stock to be regularly declared and updated on the portal of this Department i.e. Department of Food & Public Distribution by the participants. As per the notification stock limit will be applicable on all Edible Oils and Oilseeds put together for all States/Union Territories.
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d. Geo political issues in the commodity and its impact on Indian scenario.

Date	Event	Key Details	Key Implications/Impact
23-Mar-21	Suez Canal traffic jam between 23 March to early hours of 29 March caused by stuck ship	The Suez Canal, a critical shipping artery that connects the Mediterranean and Red Seas through Egypt, was blocked after a large cargo ship ran aground while passing through it bringing traffic on the busy trade route to a halt.	Supply Chain bottleneck with container shortage and port congestion. Freight rate hike. The congestion of the Suez Canal may delay nearly 7% of seaborne U.S. major grain shipments, according to USDA and vessel data analysed by Bloomberg. More than 80% of the impacted grain shipments are corn, with close to 60% of it on six vessels headed to China. However, Moderate effect on prices were observed as this Jam was temporary in nature.
27-Jan-22	Indonesia imposed mandatory domestic sales for palm oil	In order to control the palm oil prices in the domestic market, Indonesian govt. made a policy that palm oil exporters have to sell 20% of their total export at lower prices in the domestic market. This also has affected the supply of palm oil in the market.	This Policy has affected the supply of palm oil in the global market. It was reported that sellers/exporters quoted higher rates for selling / exporting the 80% of the oil in order to compensate for the loss incurred while selling 20% of the Export quota at lower rates in the domestic market.
24-Feb-22	Russia's Invasion on Ukraine	Russian President Vladimir Putin on Feb 24, 2022 informed that he has launched a military operation in Ukraine.	Russia's invasion on Ukraine has raised supply concern for wheat, corn and edible oil supply in the Global market. Further, it is feared that it may lead to a food crisis on the global scale. Ukraine is the largest source for sunflower oil import in India. Further, Russia and Ukraine are key source of world wheat product and trade. Prices of edible oils and grains are feared to get impacted from it.
09-Mar-22	Indonesia revised quota for mandatory domestic sales for palm oil from their export obligations	In order to control palm oil prices in the local market, Indonesia revised quota from 20% to 30% for Indonesian companies to sell their planned exports of crude palm oil and olein at home under a scheme known as Domestic Market Obligation (DMO) at lower prices (fixed by Govt.).The new restriction will stay in place for at least six months.	This revised policy is expected to further squeeze the supply of palm oil in the global market adversely impacting the prices.
Ongoing since Mar 28, 2022	China imposed lockdown	China Imposes Lockdown In Largest City- Shanghai Amid Biggest Outbreak Of COVID In 2 Years	Agriculture commodity export to China has slowed down due to prevailing lockdowns

2. Trading related parameter

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

Monthly Traded Quantity

Month	year	Traded volume (MT)
Apr	2021	9,64,060
May	2021	8,91,930
Jun	2021	11,12,255
Jul	2021	8,81,585
Aug	2021	6,44,395
Sep	2021	4,82,030
Oct	2021	6,43,980
Nov	2021	3,82,320
Dec	2021	2,98,335
Jan	2022	10,950
Feb	2022	445
Mar	2022	-

Annual Traded Quantity

Symbol	Traded volume (MT)
SYOREF	63,12,285

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

Symbol	Traded volume (MT)	Deliverable supply(MT)	Proportion
SYOREF	63,12,285	56,36,000	112%

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

Symbol	Traded volume (MT)	Production(MT)	Proportion
SYOREF	63,12,285	18,36,000	344%

d. Annual average Open interest as proportion of total production

Symbol	Avg Open Int (MT)	Production(MT)	Proportion
SYOREF	10,877	18,36,000	0.6%

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

Symbol	Avg Open Int (MT)	Deliverable supply (MT)	Proportion
SYOREF	10,877	56,36,000	0.2%

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

Month	Years	Traded Value (in Cr.)
Apr	2021	13,011
May	2021	12,635
Jun	2021	14,371
Jul	2021	11,763
Aug	2021	8,941
Sep	2021	6,442

Oct	2021	8,293
Nov	2021	4,674
Dec	2021	3,536
Jan	2022	131
Feb	2022	6
Mar	2022	-

Yearly

Symbol	Traded Value (in Cr.)
SYOREF	83,803

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

Expiry Month	Years	Total Delivery(MT)
Apr	2021	Nil
May	2021	Nil
Jun	2021	Nil
Jul	2021	Nil
Aug	2021	Nil
Sep	2021	Nil
Oct	2021	Nil
Nov	2021	Nil
Dec	2021	Nil
Jan	2022	Nil
Feb	2022	Nil
Mar	2022	Nil

Annual

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

Expiry Month	Years	Symbol	Value in Cr
Apr	2021	SYOREF	Nil
May	2021	SYOREF	Nil
Jun	2021	SYOREF	Nil
Jul	2021	SYOREF	Nil
Aug	2021	SYOREF	Nil
Sep	2021	SYOREF	Nil
Oct	2021	SYOREF	Nil
Nov	2021	SYOREF	Nil
Dec	2021	SYOREF	Nil
Jan	2022	SYOREF	Nil
Feb	2022	SYOREF	Nil
Mar	2022	SYOREF	Nil

Yearly

Symbol	Value in Cr
SYOREF	Nil

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

Month	Years	Avg Open Int (MT)
Apr	2021	50,816
May	2021	46,394
Jun	2021	49,931
Jul	2021	47,805
Aug	2021	40,153
Sep	2021	37,257
Oct	2021	46,419
Nov	2021	54,109
Dec	2021	44,701
Jan	2022	14,513
Feb	2022	406
Mar	2022	10

Symbol	Avg Open Int (MT)
SYOREF	10,877

j. Annual average volume to open interest ratio

Symbol	Avg,. of traded volume to Open interest
SYOREF	67.24%

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

Member Count	Client Count
139	3,348

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

Annual average of ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest

Symbol	VCPs/ Hedger
SYOREF	40.82%

Maximum daily value of ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest

Symbol	VCPs/ Hedger
SYOREF	47.34%

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

88

n. Algorithmic trading as percentage of total trading

4.61%

0. Delivery defaults

- i. Number of instances
0
- ii. Quantity involved
Nil
- iii. Value involved
Nil

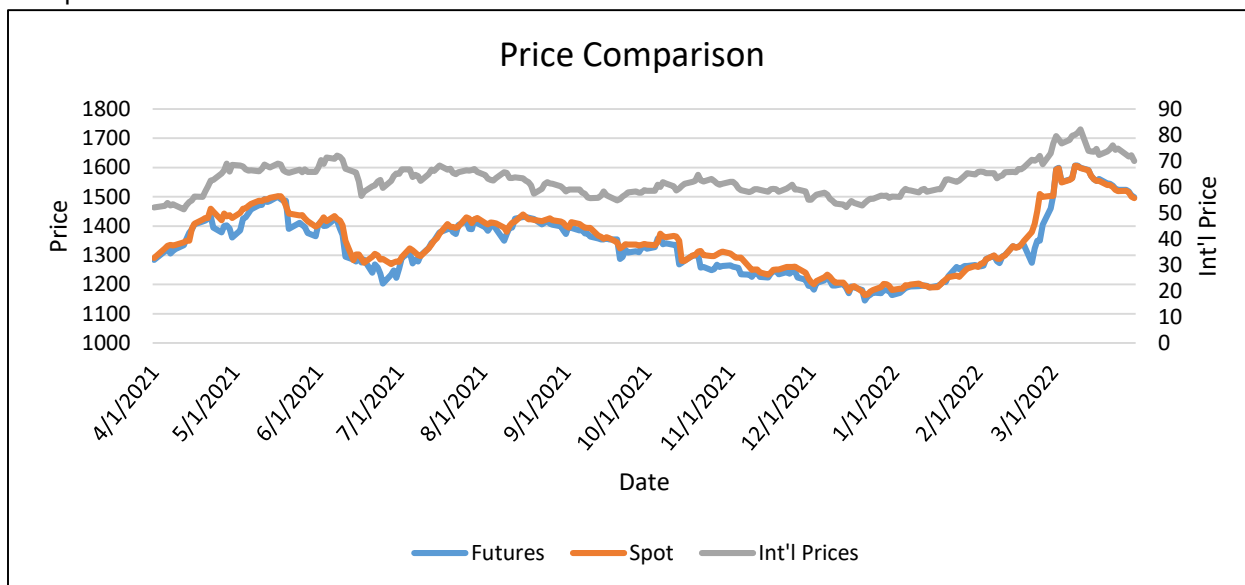
3. Price movements

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

Correlation- 0.32

Standard Deviation- 0.61

Comparison



- 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.

Correlation- 0.55

Standard Deviation- 1.13

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

Not Available

- 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.

Not Available

- 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 Square root of Standard Deviation of daily returns for the period from 1 April 2021 to 31 March 2022**)

Volatility	Futures		Spot	
	Month	Value	Month	Value
Max	Jun	0.020404	Mar	0.016163
Min	Jan	0.006388	Jan	0.005246

- 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	1
Backwardation	0

4. Others 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 of Standard Deviation of daily returns for the period from 1 April 2021 to 31 March 2022)

Basis Volatility	9.366318
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Period	Hedge Efficiency (in Percentage)
FY 2021-22	58.83%

- 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).

Refined Soy oil is produced in domestic market, as well as, it gets imported. The major imports takes place at Kandla, Mundra, JNPT, and Haldia ports. The major trading center for Refined Soy oil are Kandla, Rajkot, Ahmedabad, Indore, Neemuch, Ujjain, Dewas, Akola, Dhule, Nagpur, Latur, Mumbai, Kota, Delhi, Kolkata etc.

Following are the port wise imports figures for Soybean oil.

(In MT)					
Port Location	Oil Year 17-18	Oil Year 18-19	Oil Year 19-20	Oil Year 20-21	Oil Year 21-22*
Haldia	7,41,502	7,63,570	7,68,891	6,88,839	3,80,349
Kandla	16,97,169	15,42,637	17,73,863	12,72,885	10,34,823
JNPT	2,59,257	2,64,905	2,67,662	3,47,338	1,37,906
Mundra	3,38,112	5,01,196	4,07,900	3,87,333	2,61,106
Other Ports	11,000	21,805	1,65,738	1,69,224	1,19,620
Total	30,47,040	30,94,113	33,84,054	28,65,619	19,33,804

Source: Sea of India

* Oil import from November 2021 to March 2022

* Oil year is considered from November to October

- 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	MAHARASHTRA	WEST BENGAL
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Apr-21	9061	44370	168
May-21	10589	35491	45
Jun-21	19800	36861	139
Jul-21	15106	38172	48
Aug-21	7866	37337	15
Sep-21	3897	34616	19
Oct-21	15973	34099	37
Nov-21	16250	53830	84
Dec-21	16630	44258	57
Jan-22	7073	12802	74
Feb-22	18	244	0
Mar-22	0	0	0

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

Following list of Awareness programme, Stakeholder engagement programme has conducted for FY 2021-22.

Sr. Number	Programme	Location	Number of Participants
1	Trade Dynamics of Soy Complex	Virtual	56
2	Investors Education Programme	Virtual	17
3	Investors Education Programme	Virtual	15
4	Investors Education Programme	Virtual	5
5	Investors Education Programme	Virtual	3
6	Investors Education Programme	Virtual	6
7	Investors Education Programme	Virtual	29
8	Investors Education Programme	Virtual	25
9	Investors Education Programme	Virtual	37
10	Investors Education Programme	Virtual	19
11	Investors Education Programme	Virtual	87
12	Investors Education Programme	Virtual	13
13	Investors Education Programme	Virtual	35
14	Investors Education Programme	Virtual	46
15	Investors Education Programme	Virtual	28
16	Investors Education Programme	Virtual	39
17	Investors Education Programme	Virtual	10
18	Investors Education Programme	Virtual	11
19	Investors Education Programme	Virtual	6
20	Investors Education Programme	Indore	35
21	Investors Education Programme	Bhopal	23
22	Investors Education Programme	Ratlam	25

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 Soybean processors
- Awareness Programme in major trading centres as well as remote location
- One to one meeting with market participants and hedgers

ANNEXURE I**Hedging Efficiency Methodology**

Regression analysis is carried out between near month futures returns and NCDEX polled spot prices returns of the FY2021-22.

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.