Parameters for Performance Review of Commodity for the Financial year 2019-20

Guargum

1. **Background**

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

India is native of guar or cluster bean where it is used as a vegetable. Guargum is an extract of the guar bean, where it acts as a food and water store. Guar gum comes from the endosperm of the seed of the legume plant Cyamopsis tetragonoloba; an annual plant, grown in dry regions of India as a food crop for animals. The guar bean is principally grown in India and Pakistan, with smaller crops grown in the U.S., Australia, China, and Africa.

The guar seeds are dehusked, milled and screened to obtain the guar gum. It is typically produced as a free-flowing, pale, off-white colored, coarse to fine ground powder. Guar Gum (Galactomannan) is a high molecular weight carbohydrate polymer made up of a large number of mannose and galactose unit linked together. The crude Guar Gum is a greyish white powder, 90% of which dissolves in water. It is a non-ionic polysaccharide based on the milled endosperm of the guar bean (leguminous seed cyamposis tetragonalobus). The guar gum is produced from endosperm and consists mainly of gummy Polly groups of monogalactoses with small amount of fibre and minerals.

Several methods have been used for the manufacture of different grades of guar gum but due to its complex nature, the thermo mechanical process is generally used for the manufacture of edible grade and industrial grade guar gum. About 90 per cent of guar gum processed in India is exported. There are various grades of Guar gums pure or derivative. It is used in food, paper and textile industries. But most of the demand for the gum is due to the expansion of the shale gas and oil industries. Ninety per cent of the export is used to extract oil and shale gas, a natural gas trapped in shale formations. Guar Gum either modified or unmodified, is a very versatile and efficient biopolymer covering a wide range of industrial applications such as: Oil drilling, Textile printing, Human food and Pet Food, Paper, Explosive, Water Treatment, etc. etc. where its binding, thickening film forming and lubricating factors are of great interest.

Source: APEDA

Various grades of Guargum found In India

Supply chain is typically thought to be linear - a simple string of value chain actors that transform a raw material into a final product. For guar seed, this involves

1) Framers

2) Agents/Mandi's

3) Spilt Processing Unit

4) Brokers

5) Powder Processing units

6) Industrial Use

7) Consumer

Considering the value chain, there is possibility of high number of participants interested in derivatives trading of guar seed/gum.

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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 Guargum Scenario		
in Lakh MT	2018-19	2019-20
Opening Stock	N.A	N.A
Production	N.A	N.A
Imports	3.82	3.04
Exports	6.21	4.67
Consumption (Crush)	N.A	N.A
Closing Stocks	N.A	N.A
Source: UN Comtrade		

Indian Guargum Scenario		
In lakh MT	2018-19	2019-20 €
Opening Stocks	N. A	N. A
Production	3.9	3.95
Import	India Does Not impot Guargum	
Total Supply	N. A	N. A
Exports	3.63	2.27
Domestic Consumption	4.03	2.53
Closing Stocks	N. A	N. A
Note: Production Numbers are based on assumption that there is 30% of Guargum recovery from the seed ***Source: Ministry of Commerce*** ***Export data is for period April 19 to Jan 2020***		

Top 10 Major producing countries

Not Available

Top 10 Major consuming countries

Not Available

Top 10 Major Exporting countries

Top 10 Major Exporting countries (in lakh MT)			
Country	2018-19	Country	2019-20
India	5.29	India	3.88
Pakistan	0.25	Pakistan	0.27
EU-28	0.16	EU-28	0.17
Spain	0.11	Spain	0.11
Italy	0.08	Italy	0.09
Germany	0.06	Germany	0.04
Switzerland	0.02	Switzerland	0.02

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Denmark	0.02	Denmark	0.02
Belgium	0.02	Belgium	0.02
UK	0.02	UK	0.02
Source: UN Comtrade			

Top 10 Major Importing countries

Top 10 Major Importing countries (in lakh MT)			
Country	2018-19	Country	2019-20
USA	1.9	USA	1.3
EU-28	0.53	EU-28	0.68
Germany	0.31	United Kingdom	0.21
Russia	0.15	Germany	0.14
Argentina	0.12	Italy	0.09
United Kingdom	0.1	Japan	0.07
Italy	0.07	Argentina	0.06
Japan	0.07	Russia	0.05
Australia	0.05	Australia	0.05
Denmark	0.05	Denmark	0.05
Source: UN Comtrade			

Top 10 Major producing States in India

Not Available

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

Exemption of mandis, procurement agencies, farm operations, agri machinery hiring centres as well as intra- and inter-state movement of farm implements from the lockdown rules by the central government

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

- United States-China trade talks
- Lower crude oil prices which depressed oil drilling activity

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2. Trading related parameter

a) Monthly and Annual traded volume

Month	Traded Volume (In MT)
Apr-19	-
May-19	220
Jun-19	130
Jul-19	20
Aug-19	10
Sep-19	-
Oct-19	-
Nov-19	-
Dec-19	-
Jan-20	-
Feb-20	-
Mar-20	-
Total	**380**

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b) Annual traded volume as proportion of total deliverable supply: 0.10%

- Annual Traded Volume = 380 MT
- Deliverable Supply = 3,90,000 MT

c) Annual traded volume as proportion of total annual production: 0.10%

- Annual Traded Volume = 380 MT
- Annual Production = 3,90,000 MT

d) Annual average Open interest as proportion of total production: 0.0013%

- Annual Average OI = 5
- Annual Production = 3,90,000 MT

e) Annual average Open interest as proportion of total deliverable supply: 0.0013%

- Annual Average OI = 5
- Deliverable Supply = 3,90,000 MT

f) Monthly and Annual value of trade

Month	Value traded (In crores)
Apr-19	-
May-19	1.95
Jun-19	1.15
Jul-19	0.17
Aug-19	0.08
Sep-19	-
Oct-19	-
Nov-19	-
Dec-19	-
Jan-20	-
Feb-20	-
Mar-20	-
Total	**3.36**

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g) Monthly and Annual quantity of delivery

Month	Quantity of Delivery (In MT)
Apr-19	-
May-19	10
Jun-19	-
Jul-19	-
Aug-19	10
Sep-19	-
Oct-19	-
Nov-19	-
Dec-19	-
Jan-20	-
Feb-20	-
Mar-20	-
Total	**20**

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

Month	Value of Delivery (in crs.)
Apr-19	-
May-19	0.09
Jun-19	-
Jul-19	-
Aug-19	0.09
Sep-19	-
Oct-19	-
Nov-19	-
Dec-19	-
Jan-20	-
Feb-20	-
Mar-20	-
Total	**0.17**

i) Monthly and Annual Average Open Interest (OI)

Months	Monthly Average OI (In MT)
Apr-19	-
May-19	20
Jun-19	25
Jul-19	10
Aug-19	10
Sep-19	-
Oct-19	-
Nov-19	-
Dec-19	-
Jan-20	-
Feb-20	-
Mar-20	-

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Annual Average OI = 5 MT

Note: Average OI is taken since launch date till the end of the year

j) Annual average volume to open interest ratio: 29%

- Avg of Traded Volume: 1.45 MT
- Avg of Open Interest: 5.00 MT

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

- Unique Members = 7
- Unique Clients = 7

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

Not Available

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

Not Available

n) Algorithmic trading as percentage of total trading

- 9.23%

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 applicable

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)

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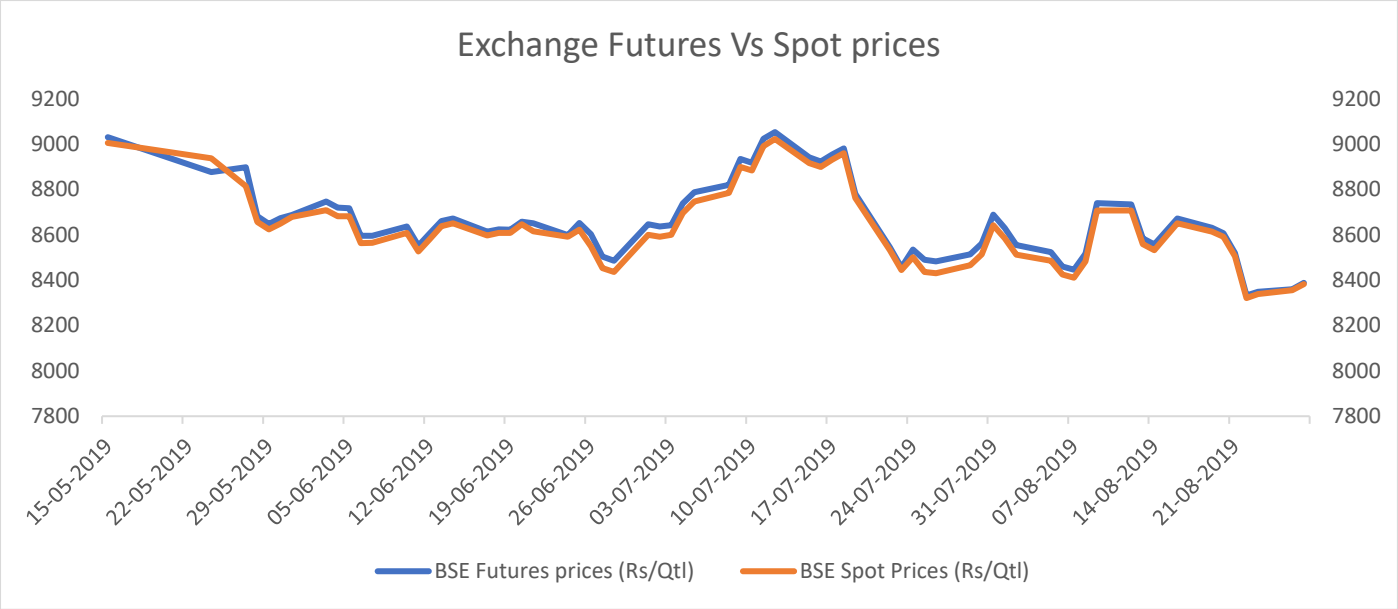
Not applicable

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



The correlation between exchange futures and exchange Spot Prices is 0.9942 FY 2019-20

The standard deviation of exchange Futures prices was 0.98% for period February FY 2019-20

The standard deviation of exchange Spot prices was 0.96% for period FY 2019-20

The ratio of Standard Deviation for the same period was 1.03

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

Not applicable

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 applicable as the Guargum is a processed commodity

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

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Commodity	Max of Daily Futures Price Volatility %	Min Daily Futures Price Volatility %	Max of Daily Spot Price Volatility %	Min Daily Spot Price Volatility %
BSE Guargum	2.62%	-2.68%	2.64%	-2.63%
Note: for the period May 15,2019 to August 27,2019				

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

BSE Guargum Futures contract was never in backwardation or contango by more than 4% in the period under review

4. Other's parameters

- **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 2019-20

Commodity	Hedge Efficiency
Guargum	99.99%

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 2019-20

Commodity	Unit	Average Return of Basis (Unit)	Standard deviation
Guargum	Rs/Qtl	0.004	0.93
Note: for the period May 15,2019 to August 27,2019			

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

- **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 centers
Rajasthan	Jodhpur , Bikaner , Ganganagar, Hanumangarh , Barmer ,Jaisalmer Nokha	Jodhpur -Basis Centre Bikaner, Ganganagar - Additional Delivery Centre
Haryana	Bhiwani , Siwani , Hisar ,Sirsa	No delivery Centre
Gujarat	Deesa, Banaskantha, Ahmadabad	Deesa- Additional Delivery Centre

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

Sr. No.	Program Type	Location	Participants
1	Awareness Program	Jaipur	150
2	Product Meeting	Mumbai	35

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

Exchange has conducted several client and product awareness programmes for market participants

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