

SESAME SEEDS-PROCESSING



AATMANIRBHAR BHARAT

PM Formalisation of Micro Food Processing
Enterprises Scheme (PM FME Scheme)

SESAME SEEDS

- ✓ Botanical Name : ***Sesamum indicum L.***
- ✓ Family : Pedaliaceae
- ✓ Varieties : Savitri, Jawahar Til-12, Jawahar Til-14, Shubra, Smarak, DS-5, RT-351, DSS-9
- ✓ India ranks first in world with 19.47 lakh ha area and 8.66 lakh tonnes production.



SESAME SEEDS

- ✓ The seeds of the plant yield edible oil. Due to the presence of potent antioxidant, sesame seeds are known as “the seed of immortality”. Two distinct types of seed are recognized, the white and the black. There are also intermediate colored varieties varying from red to rose or from brown or grey.

PRODUCTION OF SESAME SEED

Climatic conditions required :

- The crop does not grow in frosty condition, drought or heavy rains.
- As sesame seed is a tropical crop it requires hot climate during its growing period.
- The ideal temperature for best production is 25 to 30 degree Celsius.



VARIETY & TYPE OF PRODUCE

- **Brown Seeds**

- ✓ The brown seeds are known for their high content of oil around 45-50%, the brown sesame seeds are used for extraction of oil which is extensively used in India.



VARIETY & TYPE OF PRODUCE

- **White Seeds**

- ✓ The white seeds which are exported from India is known for their nutty flavor and is used as a condiment for baking purposes, it is mostly found sprinkled over buns & cakes.



VARIETY & TYPE OF PRODUCE

- **Black Seeds**

- ✓ The black seeds are rich in flavor and are mostly used as a seasoning in salads, to marinate meat and vegetables, and also for medicinal purposes.



VARIETY & TYPE OF PRODUCE

Red Sesame Seeds

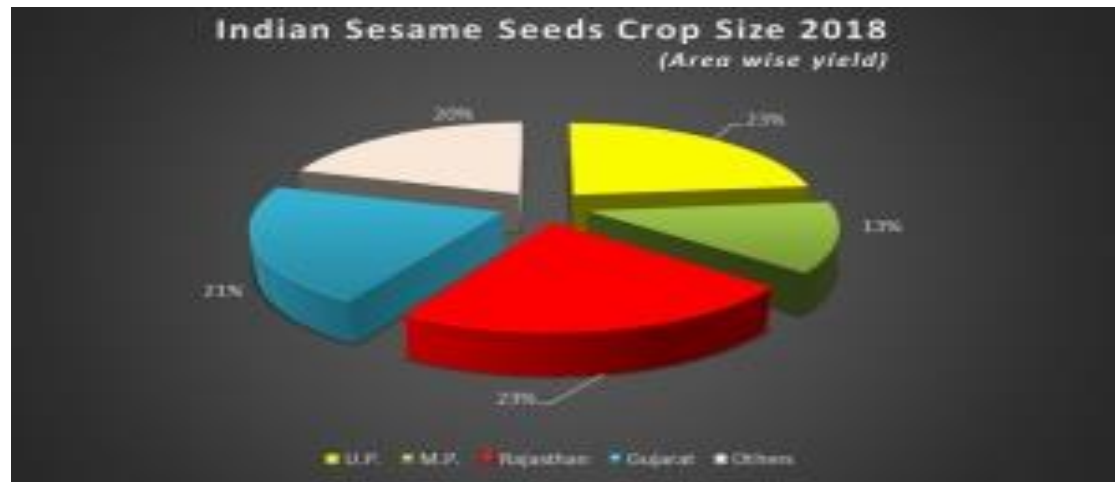
- ✓ The red sesame seeds are rich in aroma so they are mainly used in dishes to enhance the taste.



HEALTH BENEFITS

- ✓ High Source of Cholesterol - Lowering Phytosterols
- ✓ Improves Blood Pressure
- ✓ Helps in Balancing Hormones
- ✓ Boosts Nutrient Absorption

WHICH STATE IS THE LARGEST PRODUCER OF SESAME SEEDS IN INDIA ?



- Madhya Pradesh and Rajasthan is the largest producer with 23% of yield.

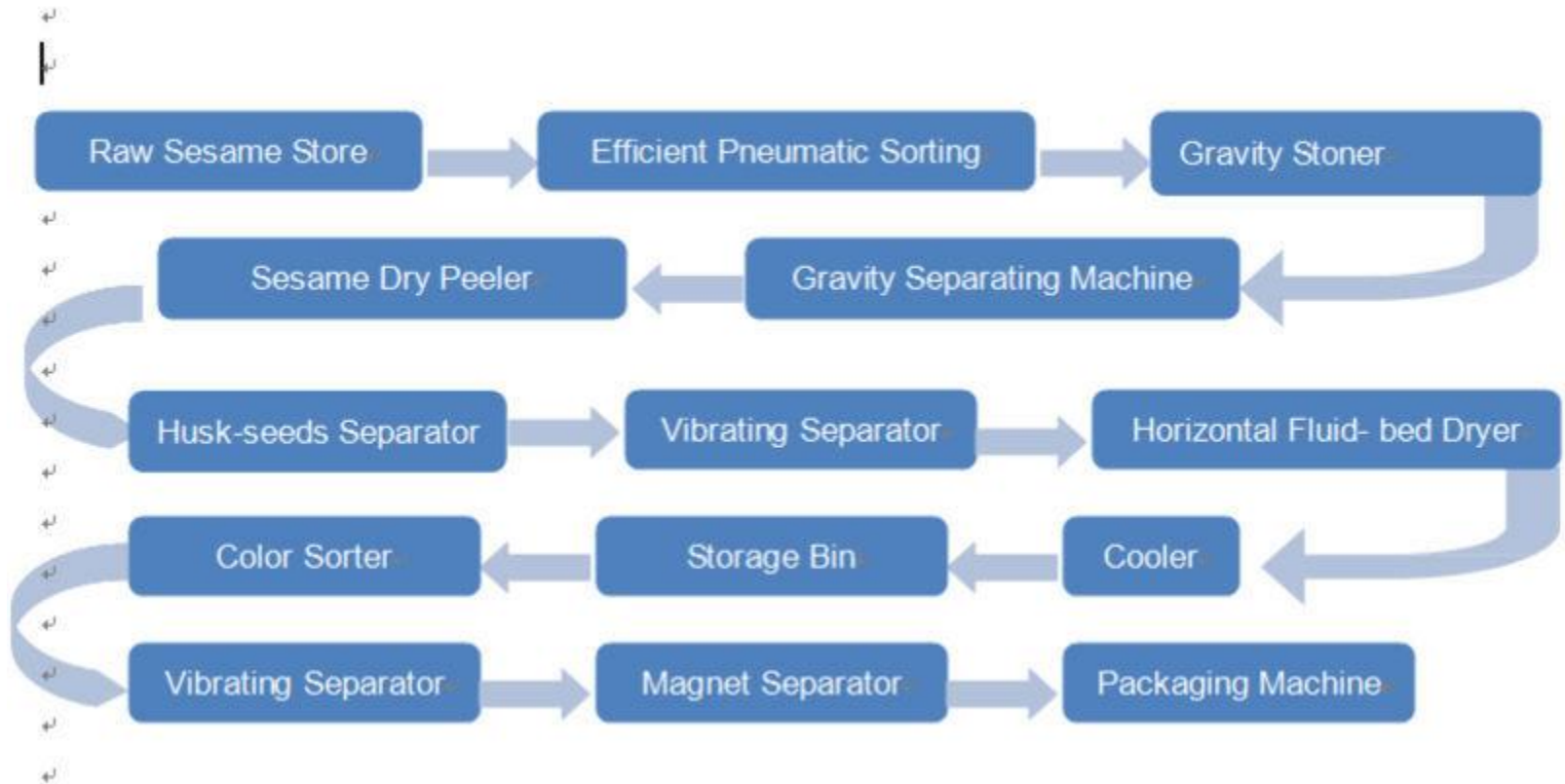
SESAME SEED PRODUCTION ALL OVER COUNTRY

Top Sesame Seed Producing Countries

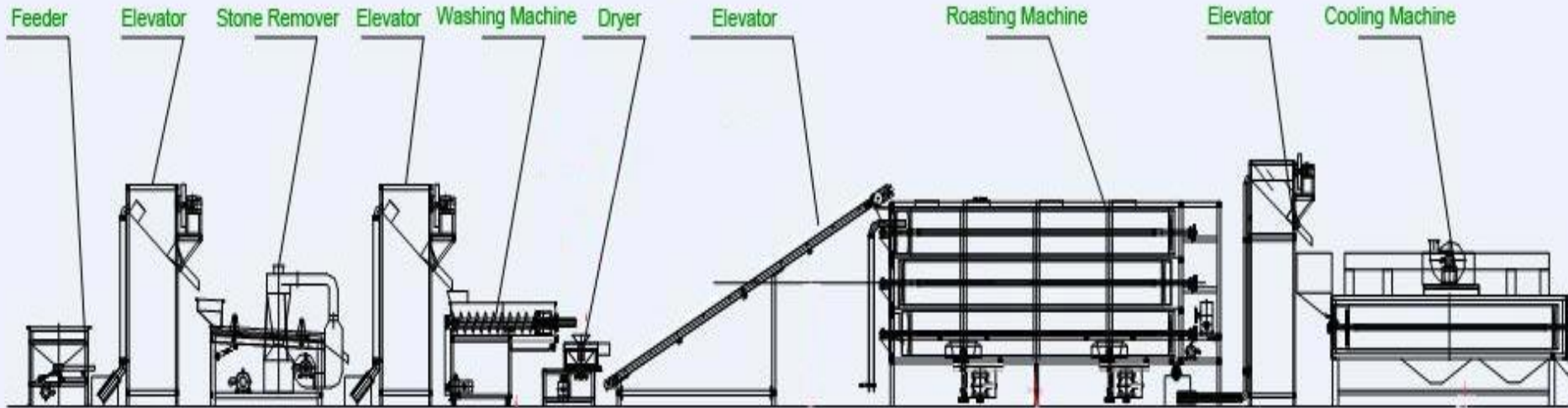
(measured in tonnes)



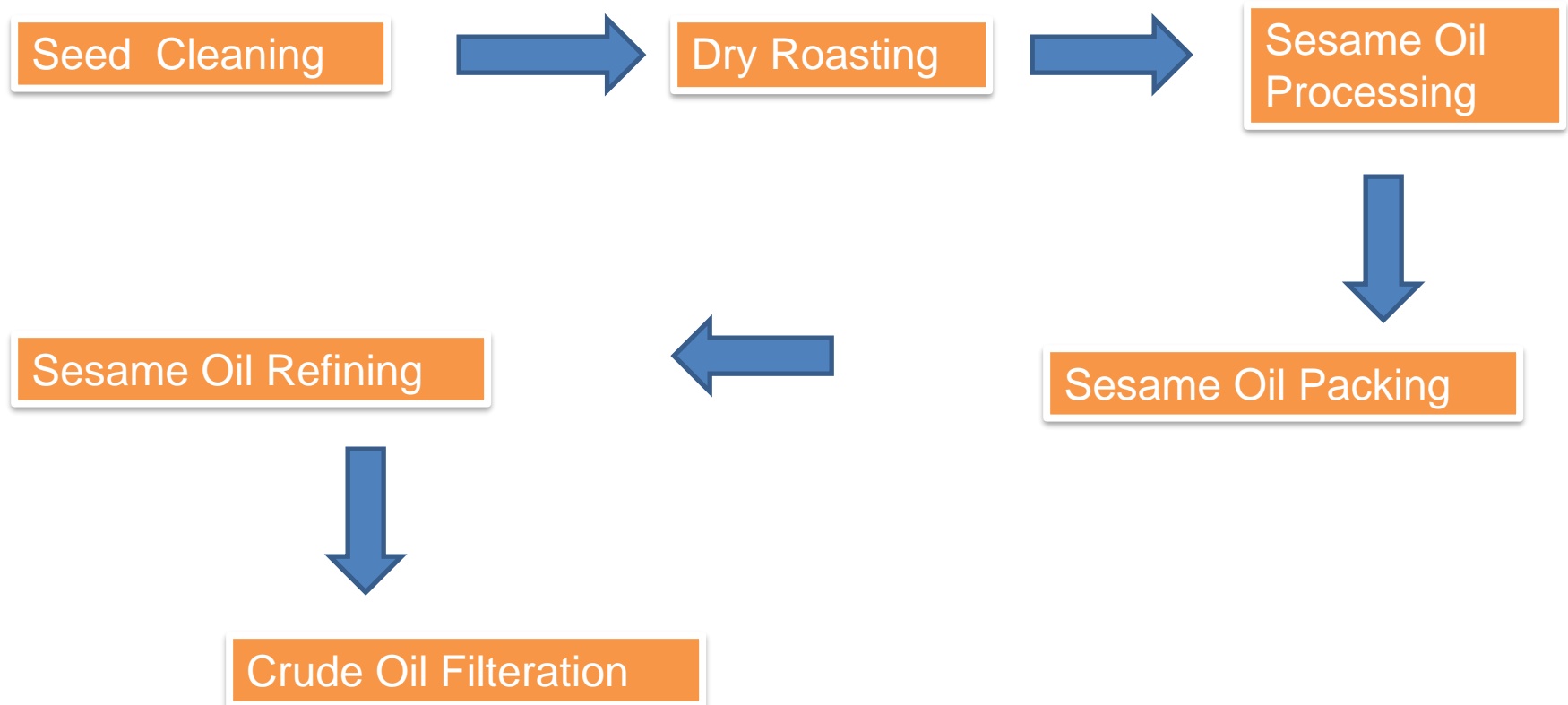
PROCESS TECHNOLOGY - SEASAME OIL



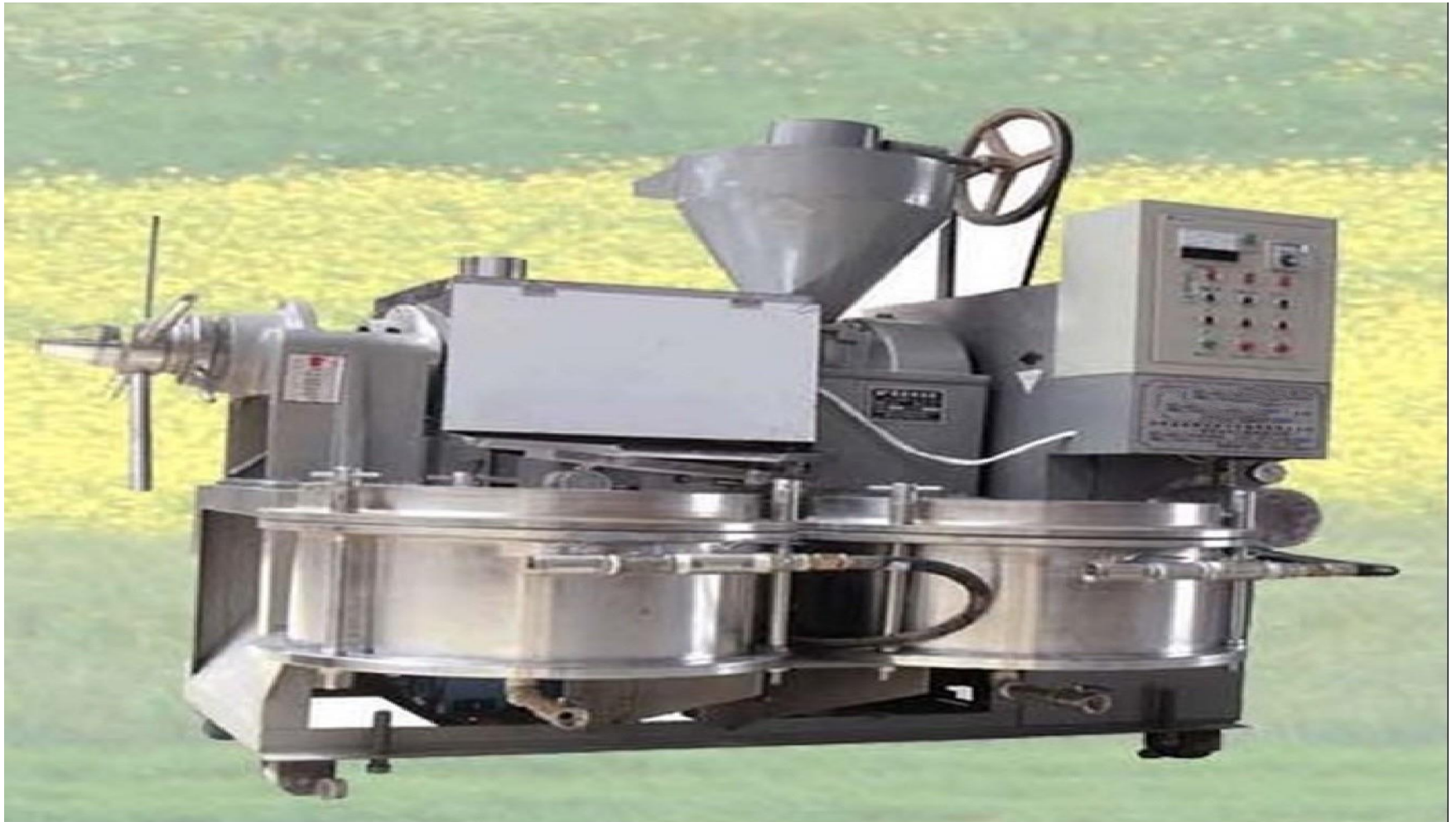
SESAME SEEDS PROCESSING CHART



MANUFACTURING PROCESS OF SESAME SEED OIL PRODUCTION



SESAME SEED OIL MACHINES



NUTRITIONAL VALUE IN SESAME SEEDS

Energy - 573 kcal (2,400 kJ)

Carbohydrates – 23.4

Sugars – 0.3

Dietary Fibre – 11.8

Fats – 49.7

Saturated – 7.0

Monosaturated – 18.8

Polysaturated – 21.8

Protein – 17.7 g

VITAMINS

- Vitamin A – 9 I U

- Vitamin B6 – 0.79 g (61%)

- Vitamin C – (0%)

- Vitamin E – 0.25 g (2%)



PROCESSING TECHNOLOGY

- ❖ For solving the problems of the technologies , technical scheme of the present invention is: a kind of sesame cures processing technology, and this technique is that sesame adds hot baked twice, and first time dries, and second time cures Titian, and concrete steps are as follows:
- ✓ **Removal of impurities:** remove the impurity such as sandstone, metal derby grain by needing the sesame of processing through sesame stone remover and carry out separation cleaning;
- ✓ **Soak:** the sesame clear water removed after impurity is soaked 5-10 minute, and the buck putting into 70 DEG C-80 DEG C after cleaning and filtering again soaks

PROCESSING TECHNOLOGY

- ✓ **Separation of hull and kernel:** the sesame of immersion is carried out sesame skin through centrifuge and is separated with shelled sesame;
- ✓ **Dry:** by the shelled sesame hot blast drying at 80 DEG C of-90 DEG C of temperature after peeling;
- ✓ **Bake and bank up with earth:** shelled sesame is baked and banked up with earth 20-25 minutes at 130 DEG C of-140 DEG C of temperature.

PROCESSING TECHNOLOGY

- ✓ **Further, described Step 2:** in sesame put into buck and soak 20-30 minutes, treat that its sesame skin rises brokenly, prematurity sesame can be removed in soaking by described sesame.
- ✓ **Further, described Step 3:** middle oven dry about 40 minutes, it is burned that first time oven dry prevents shelled sesame from sticking together.
- ✓ **Further, described Step 4:** in temperature divide three phases to be progressively promoted to 130 DEG C-140 DEG C: first stage 60-70 DEG C bakes and banks up with earth 5-8 minutes, bakes and banks up with earth 10-15 minutes for second stage 90-100 DEG C.

PRODUCTION TRADE

- ✓ In 2018, world production of sesame seeds was 6 million tonnes, led by Sudan, Myanmar, and India (table).
- ✓ The white and other lighter-coloured sesame seeds are common in Europe, the Americas, West Asia, and the Indian subcontinent. The black and darker-coloured sesame seeds are mostly produced in China and Southeast Asia.

PRODUCTION TRADE

Sesame seed production – 2018	
Country	Production (<u>tonnes</u>)
Sudan	981,000
Myanmar	768,858
India	746,000
Nigeria	572,761
China	431,500
World	6,015,573

PRODUCTION TRADE

- ❑ Japan is the world's largest sesame importer. Sesame oil, particularly from roasted seed, is an important component of Japanese cooking and traditionally the principal use of the seed. China is the second-largest importer of sesame, mostly oil-grade. China exports lower-priced food-grade sesame seeds, particularly to Southeast Asia. Other major importers are the United States, Canada, the Netherlands, Turkey, and France. Sesame seed is a high-value cash crop. Prices have ranged between US\$800 and \$1700 per metric ton between 2008 and 2010.

PRODUCTION TRADE

- ✓ Sesame exports sell across a wide price range. Quality perception, particularly how the seed looks, is a major pricing factor. Most importers who supply ingredient distributors and oil processors only want to purchase scientifically treated, properly cleaned, washed, dried, colour-sorted, size-graded, and impurity-free seeds with a guaranteed minimum oil content (not less than 40%) packed according to international standards. Seeds that do not meet these quality standards are considered unfit for export and are consumed locally. In 2008, by volume, premium prices, and quality, the largest exporter was India, followed by Ethiopia and Myanmar.



National Institute of Food Technology and Entrepreneurship and Management

Ministry of Food Processing Industries

Plot No. 97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-
131028

🌐 Website: <http://www.niftem.ac.in>

✉ Email: pmfmecell@niftem.ac.in

☎ Call: 0130-2281089