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Oil Technologists' Association of India (North Zone)

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Editor's desk

As more and more processed food products including edible oil are entering food chain, the health consequences of co contaminants produced during processing are attracting a lot of attention. The 3-MCPD (3-monochloropropane1,2 diol) and GE (Glycidyl Esters) are few. Though they are detected in all edible oils and fats but relatively higher amount found in Palm oils. Data shows that the time of harvest, processing temperature and processing steps can significantly effect the production of these contaminants. Similar study for production of contaminants on various indigenous oils are also required as the standard processing route is altered frequently.

The quality standard and testing protocols responsible for quality assurance and quality control requires review and modification. Integration with and adoption of globally accepted processes and protocol will ensure that Indian products are accepted without hesitation. This will not only enable Indian industry to come at par with global standards but also make Indian product world class and they will be accepted as quality products in global market place.

Automation of oil industry is also relevant in today's context. Today automation does not require huge capital expenditure and reliance on imported input. Now products, processes, trained manpower and expertise is available locally. Though in big processing units, automation is being practiced, but scope of complete automation is still there. In small scale industries automation is yet to take off. Automation will reduce dependence on manual labour, improve product and quality, increase productivity and ensure consistent product of uniform quality.

Modernization along with adherence to quality will only ensure that Indian industries compete with Global industries and our product are accepted internationally.

Yours truly
CS Joshi
Editor

Oil Technologists' Association of India
(North Zone)

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GHEE – The Super Food from India

Dr. R S KHANNA
International Dairy Consultant

Introduction

During September 2011, when I made a presentation under the title "Ghee – the elixir of life", at a seminar at the National Dairy Research Institute Karnal, I was dubbed as an Ayurved expert. I was, nevertheless, elated because I had broken many myths surrounding the intake of ghee versus other cooking oils. Ghee has been wrongly dubbed by the media, medicos and pharma companies from the western nations and many in India, as a cooking medium that hardens the arteries, was main source of high blood pressure, was one of the major causes of heart troubles and above all was bad when compared to vegetable oils. Another myth is that ghee is often defined as "clarified butter", which is incorrect because the clarified butter is butter oil and not ghee. Consumption of ghee in India got a boost after the yoga guru Baba Ramdev has been promoting its consumption and selling it through own outlets.

Modern Research on Consumption of Butter

We in India are fond of trusting the foreign research institutes than our own, more particularly the vedic annotations. Ghee has become a superfood ever since the Time (US edition) published a report in 2014, stating that eating butter (Americans are now becoming aware of ghee) was better than oil-based margarine. In its cover story the Time magazine had reported in 2014 that fat had become "the most vilified nutrient in the American diet" despite the scientific evidence showing it didn't harm health or cause weight gain in moderation . "Saturated fat was considered dietary public health enemy number one," says Dr. David Ludwig, a professor of nutrition at Harvard School of Public Health and author of the book "Always Hungry?". The research reports since then have been singing paens for butter and ghee.

Imagine what has happened non-dairy alternatives like margarine during the last three decades. Per capita consumption of margarine in the United States has fallen from a peak of 12 pounds during 1970s to 3.5 pounds during 2010 and is likely to fall further. Since 2010, the USDA has not been able to capture data on consumption of margarine. Acute and continuing fall in sales of margarine has made the Unilever, the company known as the largest seller of margarine, keen to sell its margarine business. Data from Euromonitor International, a research firm, illustrate why Unilever is keen to leave the spreads business behind. As against margarine, the market for butter is far from saturated. Global sales are expected to rise by 9% annually over the next five years, whereas sales of margarine are projected to stay flat. If Euromonitor's forecasts are correct, the spreads business may soon face a margarine call .

While most oils do not contain cholesterol, ghee does have it. On account of cholesterol, ghee has been often blamed for high blood pressure and atherosclerosis. A systematic review based on a cohort of 30 studies was carried out by researchers from the University of South Florida, the Japan Institute of Pharmacovigilance and various other international institutions in Japan, Sweden, UK, Ireland, US and Italy . The aim was to gather evidence whether LDL – "bad" – cholesterol is associated with mortality in older adults. It has long been thought that cholesterol is a key cause of the fatty build-up in arteries (atherosclerosis) that causes heart disease. However, the researchers say there are contradictions to this view. Recent research has suggested that total cholesterol becomes less of a risk factor for all-cause or cardiovascular mortality the older people get. Researchers chose 30 studies in total to analyse. 28 studies looked at the link with death from any cause. Twelve found no link between LDL and mortality, but 16 actually found that lower LDL was linked with higher mortality risk – the opposite to what was expected. Only nine studies looked at cardiovascular mortality link specifically – seven found no link and two found the opposite link to what was expected.

Ayurved on Ghee

Character and application of Ghee by source

Ayurved has described eight types of ghee based on the species of animals from whose milk ghee is sourced.

1. **Cow's Ghee:** The most common in use. Out of the eight types of ghee mentioned in Ayurveda cow's ghee is considered best for therapeutic actions as well as daily use as diet articles. It is sweet in taste and Vipaka (post digestive taste), cold in action and pacifies Vata and Pitta. It promotes body strength and eyesight and specifically useful in the

treatment of poisoning. Milk of the cow is sweet in taste and has cold, soft, unctuous, thick, smooth, slimly, heavy, slow and pleasing properties. All these ten properties of milk are similar to that of Oja. Therefore, it increases Oja and is Jivaniya i.e., it provides all the benefits of Rasayana.

2. **Buffalo's Ghee:** It is sweet both in taste and Vipaka, cold in action and heavy to digest. It pacifies Vata and Pitta but increases Kapha and is useful for the treatment of bleeding disorders. Vijayarakshita, the commentator of Madhava Nidana, while describing the role of Anshansha Kalapana in pathogenesis mentions that buffalo's ghee and Kapha have all the properties similar to each other, so ghee causes maximum increase in Kapha. Charaka has advised to use buffalo's Ghee for the treatment of jaundice particularly for the preparation of medicated ghee for this disease. Buffalo's milk in comparison to cow's milk is more heavy and cold and possesses more fat. It induces sleep and useful for such persons who have excessive digestive power.

3. **Goat's Ghee:** Ghee of goat is light to digest, promotes digestive power and body strength and increases eyesight. It is Pathya for the diseases such as cough, dyspnoea and tuberculosis. The milk of goat is astringent and sweet in taste, cold in potency, light in digestion and solidifies the feces. It is useful in the treatment of bleeding disorders, diarrhea, tuberculosis, cough and fever.

4. **Sheep's Ghee:** Ghee of sheep is light to digest. It is useful in the treatment of disorders of Vata and Kapha, tuberculosis, gynecological disorders (Yoni Dosha) and tremors. The milk of sheep is hot in potency and increases Pitta and Kapha. It may produce hiccup and dyspnoea.

5. **Camel's Ghee:** Ghee of camel is pungent in Vipaka (post digestion taste), promotes the digestive power and relieves the vitiation of Kapha and Vata. It is useful in the treatment of chronic skin diseases (Kushtha), localized swelling in abdomen (Gulma), generalized enlargement of abdomen (Udara Roga), swelling, poising and worm infestation. The milk of camel has slight saline taste, light in digestion, hot in potency and is dry. It pacifies the disorders caused by Vata and Kapha, distension of abdomen, swelling, piles and worm infestation. It is specially indicated for the treatment of Udara Roga such as ascites.

6. **Mare's Ghee:** Ghee of mare is astringent (Kashaya) in taste, light in digestion, hot in potency (Ushna Virya) and promotes digestion power. It relieves Kapha disorders and decreases the quantity of urine. Hence it may be useful in polyuria and diabetes mellitus. The milk of mare is slightly saline and sour in taste, hot in potency, light and dry in action. It promotes body strength, provides firmness to body organs and cures the Vata situated in Shakha.

7. **Elephant's Ghee:** Ghee of elephant is astringent (Kashaya) and bitter in taste, light in digestion, promotes digestive power, pacifies Kapha, makes the feces formed and causes decrease in urine. It is useful in the treatment of chronic skin diseases (Kushtha), poisoning and worm infestation. The milk of elephant is heavy in digestion, promotes the body strength and provided maximum firmness to body parts.

8. **Women's Ghee:** Ghee obtained from women's milk cannot be used for common practice. However, it is light in digestion, promotes growth of child and digestive power and it useful like nectar. It provides relief in eye disease and poisoning. It may not be ethically right to use the women's milk for common practice but due to its unique properties, it may be very useful in emergency. For instance few drops of women's milk put in the nostrils in the form of Nasya may stop the bleeding from nose immediately. Mother's milk provides all the properties of Rasayana to the child. It increases weight and is wholesome for the child. It is used for effusion of eyes in eye diseases. All the above-mentioned properties of various types of ghee are of that which is obtained through the process of churning of curd of respective milk. The properties of ghee directly obtained from milk i. e. cream are mentioned separately. Similarly the properties of ghee and butter are also separate. For instances ghee relieves constipation due to its Sara properties, while butter may cause constipation due to its Grahi (astringent) properties.

Properties of ghee

In ayurvedic texts, the Acharyas have given the properties of Ghee as below:

Sastham Dhi Smruti Medhagni balayuhu sukra caksusam,

Balvrudhapraja Kanti Saukumarya Svarathinam,

Ksataksina Parisarpa Sastragni Pittatmanam

Vatapita Visonmada Sosalakshmi Jvarapaham.

"Ghee is good for Smruti (memory), Medha (intelligence), Agni (digestive powers), Bala (strength),

Ayur (Agility), Shukra (sperms and semen), Chaksu (eye vision), Balyavastha (childhood, growth), Vruddhavastha (old age, helps slowing aging process), Praja, Kranti, Saukumaryata (beauty) and Svara (softness of voive/speech). It is also effective on Kshata, Kshina, Parisarpa, injured with Shastra and Agni, Pitta Prakruti, Vata, Pitta and Visonmada, Shosa and Jvara."

It is considered that completer absence of ghee in diet cause diseases of musculoskeletal systems, Sukra Kshyay (diseases of reproductive system), infertility in women and men, Skin diseases, Vata Vyadhi (diseases of Nervous system), Vibandh (Constipation), Acidity, Depression, Daurbalyata, (Weakness). Because of the imitation of western life, the modern women do not take ghee during antenatal and postnatal phases, and are suffers from backache, difficulty in lactation, weakness etc.

Therapeutic Application of Purana Ghrita (Old Ghee)

Purana Ghrita (Old Ghee)

The ghee, which preserved more than one year, is generally considered as Purana Ghrita (Old Ghee). It is considered as the best medicine for the mental disease like Unmada, Apasmara etc. and Sushruta has included it in Aparajita Gana described in the chapter of Unmada. Old ghee promotes appetite, digestion, intellect and body strength and protects as well as cures from various types of Graha disorders. It is also used as Vrana Sodhana and Vrana Ropana. The ghee more than ten years and attains all the Properties of Rasayana. Astanga Sangraha mentioned that it has got properties like that of Amrita (nectar).

Old ghee is Katu (acrid) and Tikta (bitter) in taste, Katu in Vipaka and Sheeta (cold) in Veerya. It alleviates Tridosa and possesses Sara (laxative) property due to which it may be used for Virechana.

Classification for Purana Ghrita

There are four types of Purana Ghrita based on the age for which the ghee has been preserved. These are: Purana Ghrita, Prapurana Ghrita, Kumbha Sarpi, Maha Ghrita.

1. **Purana Ghrita:** Ghrita, which is properly preserved for more than one year but less than eleven years, is known as Purana Ghrita. Dalhana quotes some other view according to which ten years old Ghee is Purana Ghrita. It is having pungent smell and colour like that or the juice of lac and is very useful for treating all types of Graha disorders (some varieties of mental diseases). It is better to administer old Ghee orally. It is considered as one of the best purgative medicine, Tridosha Hara, Sheeta an Intellect promoting agent.

2. **Prapurana Ghrita:** Ghrita, which is kept for more than ten years but, less than hundred years is called Prapurana Ghrita. It is more potent than Purana Ghrita.

3. **Kumbha Sarpi:** Ghrita which is preserved for more than hundred years but less than 111 years is termed as Kumbha Sarpi. However, Chakrapani considers only 10 years old Ghee as Kumbha Sarpi. It has been mentioned that all the diseases, specially mental disorders can be cured by this Ghee and even its sight, touch and smell can relive the attack of Graha. Charaka indicates its use for Mada, Murccha (unconsciousness) also. Its other indications are Apasmara (epilepsy) and Unmada (insanity).

4. **Maha Ghrita:** More than 111 years old Ghee is considered as Maha Ghrita. It alleviates Vata and Kapha Dosha, provides body strength and considered more beneficial for Timira (cataract) and all types of the Bhuta-disorders.

Ghee is Superfood

Ghee is used throughout the life of man from birth till death. Our ancestors said that ghee must be consumed even if one has to borrow money for it. Prosperity and health was determined by the use of ghee in daily life.

This is because ghee nutritionally high value components a mix of glycerides, 0.2-0.4% cholesterol, essential fatty acids, free fatty acids, phospholipids, sterols, sterol esters, fat-soluble vitamins A, D, E and K, carbonyls, hydrocarbons, carotenoids (only in ghee derived from cow milk), casein, calcium, phosphorus, iron and so on. Depending on the process of manufacturing ghee contains high amounts of conjugated linoleic acid.

Nutritionally, ghee is superior to other fats mainly because of the presence of characteristic short chain and medium chain fatty acids, essential fatty acids such as linolenic acid and arachidonic acid and fat soluble vitamins viz., A, D, E, K. Ghee has the ability to bind toxins; enhances complexion and glow of the face and body; is a known rejuvenator for the eyes; Increases physical and mental stamina; supports learning, retention and recall; increases longevity; cools and lubricates the stomach wall; nurtures and cleanses blood tissue; supports healthy hormone production and mineral absorption; and provides sustaining energy. While on molecule of glucose provides 38 units of energy

carried by adenosine triphosphate (ATP), one molecule of fat from ghee provides 146 units of energy (ATP units).

Some of the medical benefits of ghee have been identified by Professor Poonia and Pandhi of the Centre of food science and technology, Institute of Agricultural Sciences, Banaras Hindu University.

- Use ghee to fight inflammation: Ghee has been shown to reduce leukotriene secretion and reduce prostaglandin. Prostaglandin levels and leukotriene secretion both play a role in inflammation.
- Use ghee if you are lactose- or casein-intolerant: The method of clarifying butter to turn it into ghee removes most of the lactose and casein contained in butter. Many of those who are lactose- or casein-intolerant can enjoy ghee without any negative reaction.
- Use ghee to boost daily dose of antioxidants: Ghee contains carotenoids and vitamins A and E. These antioxidants fight free radicals and promote skin cell growth, good vision and immune system health, as well as reduce the risk of certain cancers and heart disease.
- Use ghee to boost micronutrient intake: Ghee is excellent source of vitamin K2 and CLA, nutrients that are not found in very many other foods. Vitamin K2 may help prevent calcification of the arteries.
- Ghee (unlike other oils) is rich in butyric acid, a short chain fatty acid. Beneficial intestinal bacteria convert fibre into butyric acid and then use that for energy and intestinal wall support. A healthy body therefore makes it own form of 'ghee' but one can aid that greatly.

Medium chain fatty acids in ghee help disrupt cell walls of bad bacteria and cure infection.

Conjugated linoleic acid, pentadecanoic acid (15:0) and heptadecanoic acid (17:0), in ghee have been inversely related to the risk of cardiovascular disease (CVD) . Milk fats like CLA's & glyco and sphingolipids are shown to have inhibitory effects on cancer. Intake of 1% CLA in diet has been reported to reduce the breast cancer incidence by nearly 60% . Several studies support a role for calcium, vitamin D, and dairy foods against colon cancer. Additionally, CLAs confer a wide range of anti-carcinogenic benefits especially against breast cancer . Another study has shown that SFA's, CLA's, vaccenic acid (natural trans isomer) anticancerogenic activity .

Studies that have shown the actions of protecting heart diseases by consumption of dairy products7. Short-chain SFAs, ?-3 PUFAs, oleic acid- are known to limit the synthesis of liver cholesterol and triglycerides. The phospholipids, oleic acid, ?-6 & ? -3 PUFAs when taken in in optimal proportions- intensify estrification & metabolism of cholesterol. CLA, ?-tocoferol, Co-Q10, vitamins A & D3, phospholipids have been found to prevent cholesterol oxidation and linolenic acids(?-3), linoleic acid (?-6), also oleic acid have decreased the presence of LDL-cholesterol in blood plasma. It is believed that the subjects who drank more than the median amount of milk had a reduced risk of an ischaemic stroke, and possibly a reduced risk of an ischaemic heart disease event .

Low cholesterol ghee

Presence of cholesterol in ghee and the false propaganda that consumption of ghee can cause atherosclerosis and CVD prompted researchers to find methodology to produce low cholesterol ghee. Kwality dairy in Haryana has been the first to produce low-cholesterol ghee by taking the patent from the National Dairy Research Institute Karnal. The ghee is sold under the brand name "LivLite". A lab scale process used cyclodextrin to extract cholesterol from cream was used for the preparation low-cholesterol ghee , .

Herbal ghee

With the objective of increasing the anti-oxidant value of ghee and providing more nutritional and health value, many researchers particularly at the National Dairy Research Institute Karnal have been using many herbs known for increasing immunity. Ethanolic extract of the vidarikand was more effective for preventing the development of the peroxide value and conjugated diene value in ghee during storage.

Another study reported that ethanolic extract of arjuna bark increased the shelf life of ghee as compared to control sample during storage at 80°C. Their findings also suggested that freshly prepared ghee from cow milk added with Arjuna bark had good potentiality to act as free radical scavenger.

Trade News

Cabinet approves utilisation of stock of pulses to meet nutrition demand

The Cabinet Committee on Economic Affairs has approved to utilize part of stock of pulses in the buffer maintained by the Department of Consumer Affairs, for meeting the protein component under various schemes of Central Government providing nutrition to various target groups/beneficiaries.

To give effect to the decision, the CCEA has told the concerned Departments/Ministries to carry out suitable amendments in their schemes/guidelines to enable them to take/provide pulses from the buffer in kind under their respective Schemes.

All the concerned Ministries/Departments will make necessary changes in their schemes and assess requirement of pulses within next three months of the approval. Supply of pulses from the Central buffer would commence based on such requirement indicated by these Ministries/Departments.

The objective of the approval is to enable the concerned administrative Ministries/Departments to ensure that pulses from the buffer are utilized as in 'kind' component of the Centre's contribution in such schemes.

The concerned Departments may revert to the current system of making nutrition available only in case of non-availability of pulses in the buffer. Ministries/Departments or their agencies providing food/catering/hospitality services have also been enabled to make suitable provision in their Commercial arrangement to ensure that the requirements of pulses for such operations are met through the central buffer.

The approval also aims to maintain adequate supply of nutrients/pulses under the various schemes/programmes of Government including Mid DayMeal(MDM) scheme, hospitals, etc. as well as Ministries/Departments or their agencies providing food/catering/hospitality services.

Also, the cost of pulses supplied to states will not be higher than the market price.

For a sustainable buffer operation, availability of regular and assured channels of disposal wherein a committed quantity is taken/lifted from the buffer at regular periodicity may be of critical importance. This would facilitate optimal utilization and efficient management of pulses in buffer through regular/planned rotation of pulses and replacement of stock through fresh crop on continual basis.

Courtesy: Nuffoodsspectrum.in

FSSAI tightens the noose around eateries without food licence

Food safety regulator FSSAI on Tuesday warned that hotels and restaurants operating without its licence will be sealed and closed if they fail to take permits in the next 3 months.

The rule for licence also applies to those establishments, including religious places, where food is not charged. However, petty manufacturers, retailers and hawkers, among others, are exempt from this.

Food Safety and Standards Authority of India (FSSAI) CEO Pawan Kumar Agarwal said it will first ask states to run a special drive to create awareness among food business operators about the compulsory requirement of licences.

"I am told that 30-40 percent of our restaurants and hotels do not have FSSAI licences. If this is the law of the land, is it acceptable?" he asked at a FICCI conference on food service retail 'Foodzania 2017' here.

Stating that there is some confusion in businesses on whether the FSSAI licence is mandatory, Agarwal made it clear that it is compulsory for all food businesses and non-compliance is not justified.

"Since there is still some confusion, we are asking state governments to take up a special drive. After the time period for that is over, we are advising them to seal and close all such units across the country if they fail to take FSSAI licences," he said.

FSSAI Enforcement Director, Agarwal said, has been tasked with ensuring 100 percent licensing of restaurants and hotels in the next three months. He made it clear that there will be "no comprise at all".

Stating that FSSAI licence is needed for food business even if the food is not charged, he said that "even in temples, they are supposed to have FSSAI licences or registration, depending on the size of the business.

Therefore, there is no option".

He further said that after taking the licence, food businesses also need to comply with all the regulations such as submission of food safety management plan.

As per the Food Safety and Standards Act, 2006, no person shall commence or carry out any food business except under a licence.

Under the law, food business means any undertaking, whether for profit or not and whether public or private, carrying out activities related to any stage of manufacturing, processing, packaging, storage, transportation, distribution of food, import and includes catering services, sale of food or ingredients.

According to the FSSAI CEO, the regulator will soon make it mandatory for all food businesses to have at least one person as food safety supervisor who has to be trained and certified as per its curriculum.

Agarwal stressed that food operators should display their licence at prominent points on their premises. The display board at any restaurant should also have contact details of customer care as well as food inspector of that location.

The FSSAI is working on developing rating for "hygiene and hygiene plus" and the same will be out soon.

The food watchdog has been in operation for the last six years and by now, all hotels and restaurants should have secured the licence, Agarwal added.

Courtesy: Nuffoodsspectrum.in

Cabinet gives nod to set up Rs. 9,000 cr. nutrition mission

The government has approved the establishment of a National Nutrition Mission to address serious incidence of malnutrition and stunting among infants in the country.

The decision to launch the Rs. 9,000 crore nutrition mission was taken by the Cabinet on Thursday. The mission has set an ambitious goal of reducing incidence of stunting among children from 38.4 per cent now to 25 per cent by 2022, Minister for Women and Child Development (WCD) Maneka Gandhi told reporters on Friday

The mission will be jointly launched by the ministries of WCD, Health and Family Welfare and Water Resources, together with NITI Aayog.

The mission, to be launched in January next year, will be rolled out in 162 backward districts in six States, including Andhra Pradesh, Bihar and Chhattisgarh initially, and will be expanded further to 315 districts in the current financial year, the Minister said. The rest of the country will be covered over the next two years.

Giving details, WCD Secretary Rakesh Shrivastava said the beneficiaries will be enrolled in Aadhaar for better monitoring of the implementation. Out of 42 lakh children who will be covered in the first phase, 50 per cent are already Aadhaar-seeded. “We plan to increase the Aadhaar seeding to 85 per cent by the end of the month,” he said.

‘Fake enrolments’ exposed

Emphasising the need for linking the mission to Aadhaar, Gandhi said a pilot study on child nutrition programmes in Assam showed that there 3 lakh ‘fake’ children enrolled for the programme. On this account alone, the government was losing Rs. 30 lakh per day and nearly Rs. 100 crore a year.

“This is the case of just one State. Now one can imagine how much pilferage has been happening if it is extrapolated to the entire country,” she said.

The mission will strive to reduce stunting, under-nutrition, and low birth weight by 2 per cent and anaemia (among young children, women and adolescent girls) by 3 per cent annually over the three-year mission period.

Health and Family Welfare Minsiter JP Nadda said Asha workers engaged by his ministry and angawadi workers of the WCD Ministry would work in tandem to implement the mission. The government estimates that 10 crore people will benefit from the three-year-long mission.

Courtesy: thehindubusinessline.com74

IRRI and BASF team up to promote direct-seeded rice in Asia

LOS BAÑOS, Philippines and SINGAPORE – The International Rice Research Institute (IRRI) and BASF signed three agreements, paving the way for wider dissemination and adoption of direct-seeded rice (DSR) tools and technologies. Through this partnership, the two organizations will establish a multi-stakeholder DSR Consortium and further research on the use of non-genetically modified, herbicide-tolerant rice.

Under optimal conditions, direct seeding is considered a more efficient and cheaper method of growing rice than manual rice transplantation. It requires less resources such as labor and water, and it emits less greenhouse gases compared with other rice growing methods.

Although direct seeding is widely practiced in the United States and South America, challenges such as higher yield losses due to weed infestation have limited its wide-scale adoption in Asia.

The new research consortium aims to:

- develop robust mechanized dry- and wet-DSR systems,
- investigate solutions to manage weeds, and
- formulate agronomic practices suited for DSR farms in Asia.

Furthermore, the consortium will enable IRRI to develop DSR technologies and test rice varieties suitable to Asian environmental conditions. Membership is open to the public and private sectors, research organizations, NGOs, and farmer groups.

"Feeding the world is not just a public sector concern. It's a problem that needs everyone's contribution, including the private sector. With this partnership, we're enabling organizations like IRRI to work closely with companies like BASF toward a common goal, which is sustainable development," said Jacqueline Hughes, IRRI's Deputy Director General for Research.

The partnership will also advance research on non-genetically modified, herbicide-tolerant rice to safely control weed infestation in DSR systems. Once these varieties are introduced to the market, a third-party organization will assess their impact on rice productivity, profitability, and ecological sustainability.

"This partnership with IRRI will expand our reach and expertise, and we are confident that this will contribute to faster and wider dissemination of rice technologies, such as the Clearfield® Production System and Provisia® Rice System, that raise rice productivity and farmers' income at the same time. Through this collaboration, we are excited to provide products and program support that contribute to food security in a significant and environmentally sustainable way," said Gustavo Palerosi Carneiro, head of BASF's Crop Protection Division in Asia Pacific.

About the International Rice Research Institute

The International Rice Research Institute is a nonprofit, autonomous, nonpolitical, international organization established in 1960 under international treaty, with a mission to reduce poverty and hunger through rice science, improve the health of rice farmers and consumers and ensure environmental sustainability through collaborative research, partnerships and strengthening of national agricultural research and extension systems.

About BASF's Crop Protection division

With a rapidly growing population, the world is increasingly dependent on our ability to develop and maintain sustainable agriculture and healthy environments. BASF's Crop Protection division works with farmers, agricultural professionals, pest management experts and others to help make this possible. With their cooperation, BASF is able to sustain an active R&D pipeline, an innovative portfolio of products and services, and teams of experts in the lab and in the field to support customers in making their businesses succeed. In 2016, BASF's Crop Protection division generated sales of €5.6 billion. For more information, please visit agriculture.basf.com.

Wilmar to buy edible oil facility from Cargill

Wilmar International Limited Wilmar's wholly-owned subsidiary, Wilmar Kuantan Edible Oils Sdn. Bhd., has entered into an agreement with Cargill Palm Plantation Sdn. Bhd. (Cargill) for the purchase of Cargill's edible oil facilities in Kuantan, Malaysia. The edible oil facilities include a palm oil refinery and a neighboring storage facility.

"The acquisition of the Kuantan edible oil facilities marks our first presence in the east coast of peninsular Malaysia," said Yee Chek Toong, Wilmar's country head of Malaysia. "The facilities are a good fit with our refining business and will strengthen our sales and distribution network in Malaysia. Besides serving the local market, the facilities' strategic location in the Kuantan Port is an advantage for regional exports."

The sale will be completed upon approval from all relevant authorities and certain conditions being fulfilled. The transfer of ownership is expected to occur by the end of 2018.

"While we have made the strategic business decision to sell the Kuantan facilities, Cargill remains committed to our edible oil business in Malaysia and will continue operations at our two other facilities in Port Klang and Westport," said Chai Wei-Joo, managing director of Cargill's palm oil business in Malaysia.

Source: www.world-grain.com

India to monitor cooking oil reuse

The Food Safety and Standards Authority of India (FSSAI) is adding regulations on the reuse of vegetable oil in frying into the country's food safety legislation.

The FSSAI had released notification that it had finalised the rules after holding a feedback period and the new rules would come into force on 1 July 2018.

Current legislation only had general guidelines to avoid reheating and reusing cooking oil, but the new rule would prohibit the use of cooking oil that had accumulated more than 25% of total polar compounds (TPC), FSSAI said.

Repeated use of the same oil in frying caused changes in the oil's physiochemical, nutritional and sensory properties while also producing TPCs that had been linked to adverse effects on human health, the FSSAI added.

Uresh Verma, spokesman for Indian oil producer Puri Oil

Mills, said the FSSAI move was helpful for implementing and monitoring edible oil quality in order to provide the highest quality fried foods to consumers.

"Measuring total polar materials is the most predominant indicator and scientific measurement for oil quality. They are widely used in many international markets, where the oil quality is strictly regulated," Verma told FnBnews.

"With this move, the apex regulator will be able to monitor the oil quality as it wants to ensure that a quality experience is provided to the consumers at large and maintain international-level quality standards," he added.

Source: ofimagazine.com

FSSAI slams notice to companies for illegally selling Creatine Monohydrate

Through a letter, dated 21 December 2017 the FSSAI has brought to the notice of Commissioners of Food Safety in all States and UTs, FSSAI Authorised Officers and all Central Licensing Authority FSSAI that Creatine Monohydrate is being manufactured, imported and sold by various companies with or without an FSSAI License number under various brands through e-commerce platforms.

The FSSAI has also sent notices to various e-commerce platforms Amazon, Flipkart, Snapdeal and Homeshop18 to immediately discontinue the sale and remove Creatine Monohydrate from their platforms and conform to FSSAI the action they have taken.

Creatine Monohydrate is one of the most popular supplements used by people looking to build lean muscle mass, maximize performance and increase strength. Increased creatine in the muscle will increase the performance of athletes as it increases work capacity and improvement in training. Taking the supplement also increases lean body mass.

Presently Creatine Monohydrate is a product/ingredient for which no standards have been prescribed as yet under the Food Safety and Standards Act, 2006 Rules and Regulations made thereunder. Besides this, it has been observed that some FBOs that have valid food licenses issued by the Licensing Authority is selling products in the name of the product containing Creatine Monohydrate. FSSAI has declared these activities by FBOs illegal and unauthorized.

Courtesy: http://www.nuffoodsspectrum.in

Dabur to launch fruit based mocktail beverages

Dabur India Ltd will soon be introducing ready-to-drink fruit-based mocktails, or non-alcoholic versions of popular cocktails, under its fruit juice brand Real.

Real mocktails will initially come in two variants: Virgin Mary and Pina Colada. The company will later extend the range with variants like fizzy mocktails, and will look at bringing in other formats of packaging, such as cans.

Priced at Rs110 for a 1-litre tetra pack, Real mocktails will be sold at modern-trade stores, open format outlets and across online marketplaces.

Dabur's fruit juice brand Real is currently sold across 300,000 retail outlets, and Dabur will make Real mocktails available at 10-15 per cent of these outlets to start with.

Dabur currently sells 16 fruit juices under Real brand, and has a 9.8 per cent market share in the entire non-fizzy beverages market in India.

Non-alcoholic functional beverage is a growing segment in India backed by rapid urbanization, rising disposable income and growing health consciousness among the youth.

Courtesy: http://www.nuffoodsspectrum.in

Important Figures

Indian Oilseeds, Meal & Vegetable Oil, 1000 Metric Tons (MT)

1. Edible Oil estimates for India (marketing year- November 2017- October 2018)

(Unit: Million Tonnes)

Table 1:Production, Stocks, Trade and Availability of Edible Oils				
2016-17	**2017-18* Estimates**		**Dec,2017**	**Source**
10.97	9.98	Production	N.A	DVVOF
13.23	13.97	Imports	1.21**	DOC
24.20	23.95	Availability	-	
0.65	0.60	Export and Industrial use	N.A	DVVOF
23.55	23.35	Total Available for domestic consumption	-	

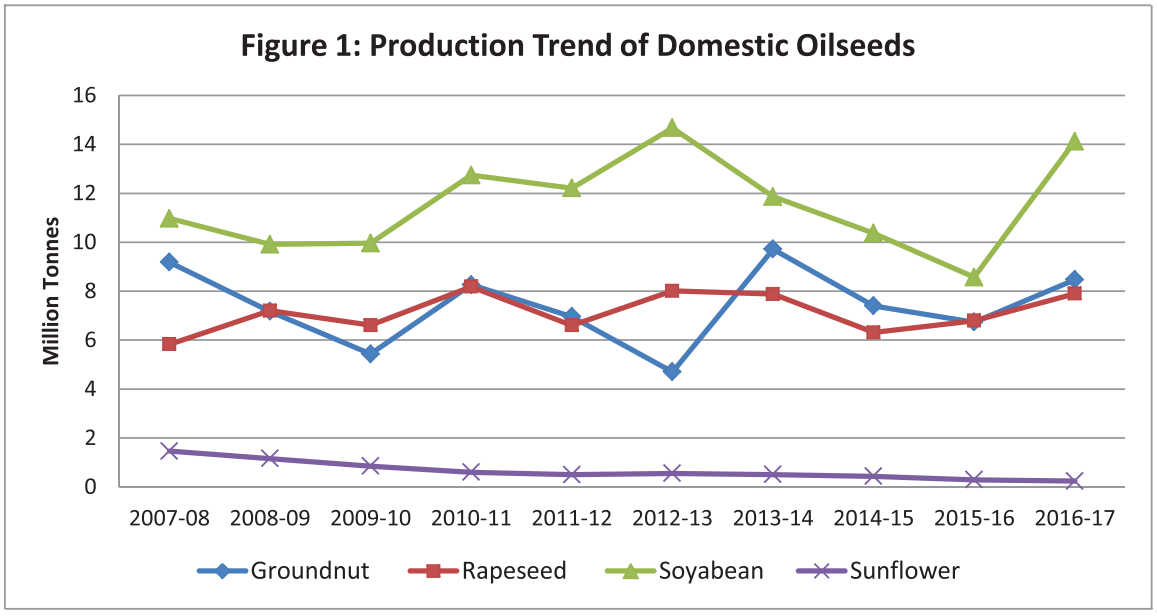
Source: Directorate of Vanaspati, Vegetable oil and Fats (DVVOF) and Department of Commerce
N.A – Not Available

*For 2017-18 estimates, Production, Export Industrial use is 3 years average from DVVOF and Import is 3 years average from DGCI&S, Kolkata.

**Figure of import is for the period Nov-Dec, 2017-18.

Availability: Domestic production plus Imports; Total Availability for Domestic Consumption: Availability minus export and Industrial use.

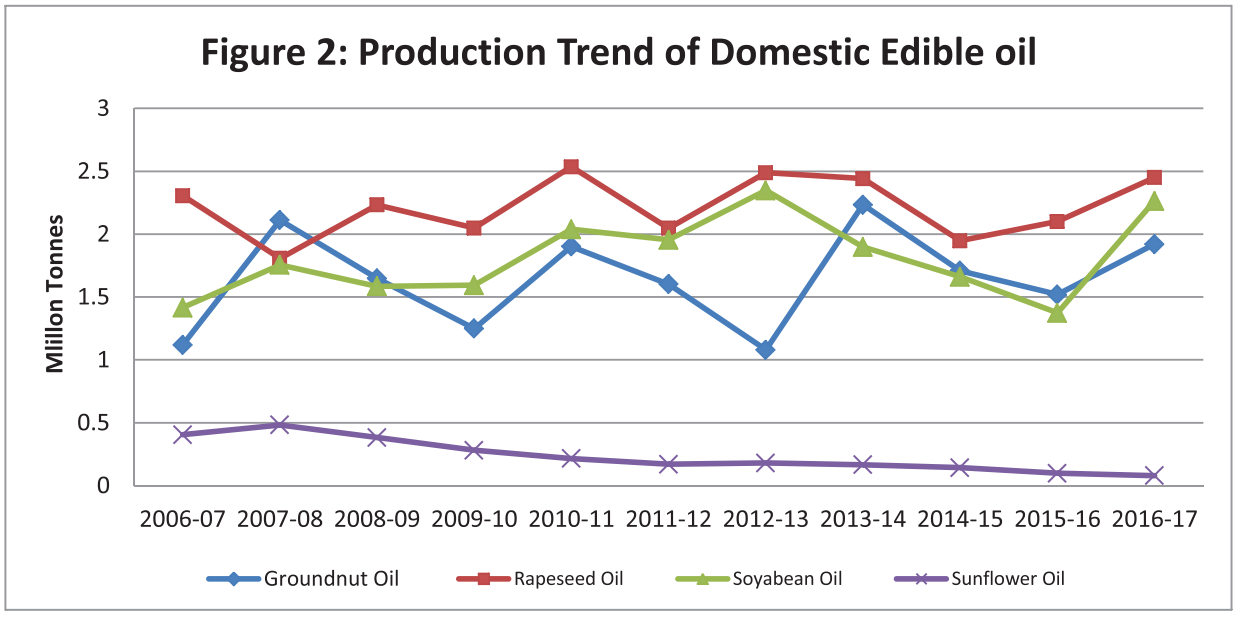
2. Production Trend of Domestic Oilseeds



Source: Directorate of Economics and Statistics

- India's Soybean production has increased in the last 10 years at CAGR of 4.79 percent.
- Production of Groundnut decreased from7.4 million (2013-14) to 6.7 million tonnes (2015-16) showing a decline of about 9%. However, production is estimated to be at 8.47 million tonnes in 2016-17.

3. Production Trend of Domestic Edible Oils



Source: Directorate of Vanaspati, Vegetable oil and Fats (DVVOF)

- Soybean oil production has increased in the last 10 years at CAGR of 4.83 percent.
- Rapeseed oil production increased from 2.11 Million MT from 2015-16 to Million 2.45 MT in 2016-17.

4. Global & Domestic Production, Exporters and Importers of Major edible oil

(Qty in Million MT)

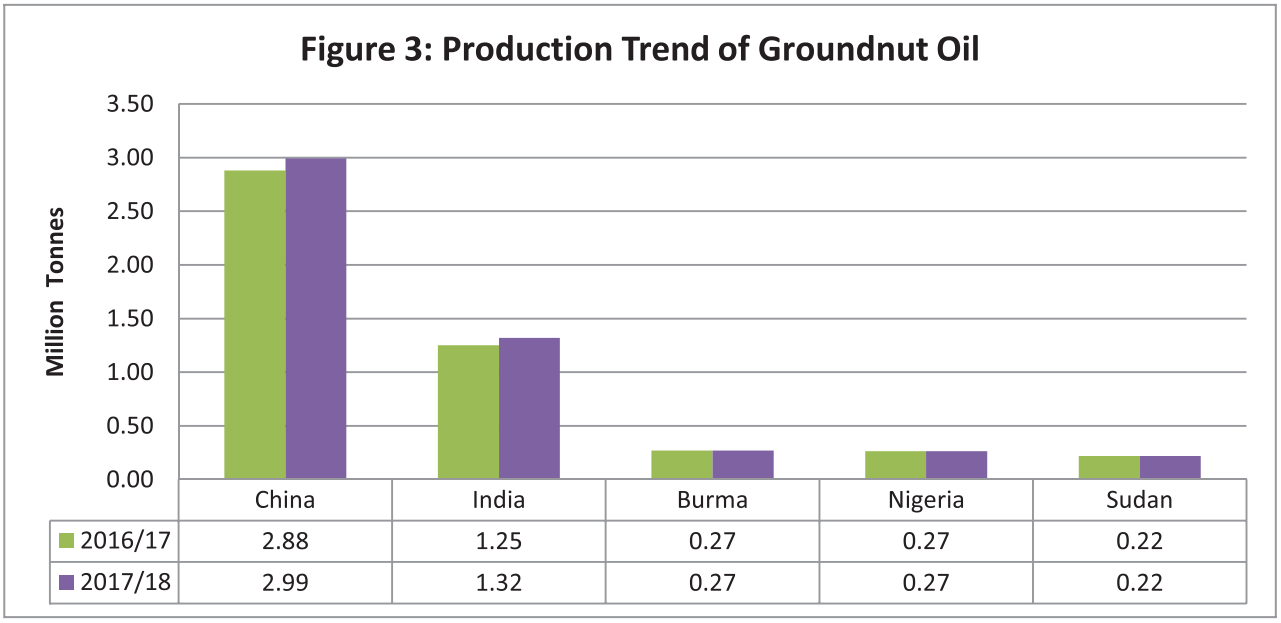
Table 2: Global & Domestic Production, Exporters and Importers of Major edible oil

Edible oil	Global production (2017-18)	India's production (2017-18)	Major Exporters/ Importers (2017-18)
Ground nut oil	5.52	1.32	Exporters: Argentina, Brazil, Senegal
			Importers: China, Italy, USA
Mustard oil	28.35	2.25	Exporters: Canada, Germany, Czech Republic
			Importers: USA, China, Netherland
Sunflower oil	17.75	0.86	Exporters: Ukraine, Russia, Argentina
			Importers: India, China, Netherlands
Soybean oil	56.15	1.69	Exporters: Argentina, Brazil, USA
			Importers: India, Bangladesh, Algeria
Palm oil	69.42	N.A	Exporters: Indonesia, Malaysia, Netherland
			Importers: India, China, Pakistan

Source: Production: USDA, Exporters & Importers: Comtrade

5. Global Production Trend of Major Edible Oils

A) Groundnut oil

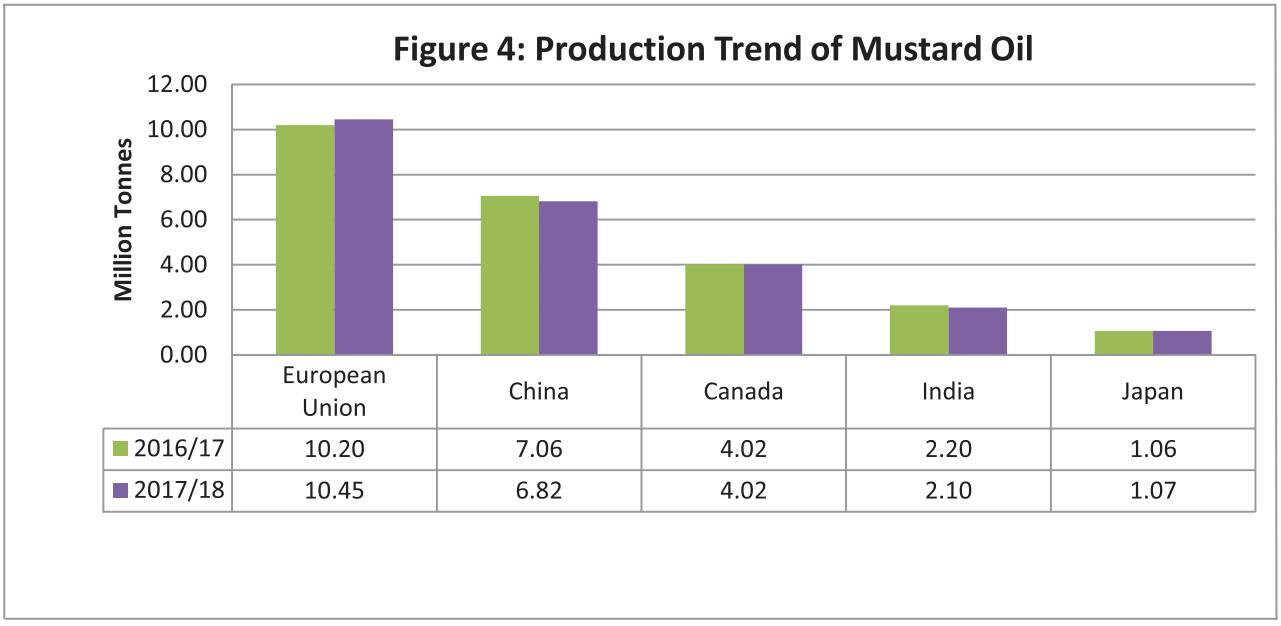


	China	India	Burma	Nigeria	Sudan
2016/17	2.88	1.25	0.27	0.27	0.22
2017/18	2.99	1.32	0.27	0.27	0.22

Source: United States Department of Agriculture

- China is expected to be the top producer followed by India and Burma in 2017-18.
- India's share in global production of Groundnut Oil in 2017-18 may be around 23 percent.

B) Mustard Oil

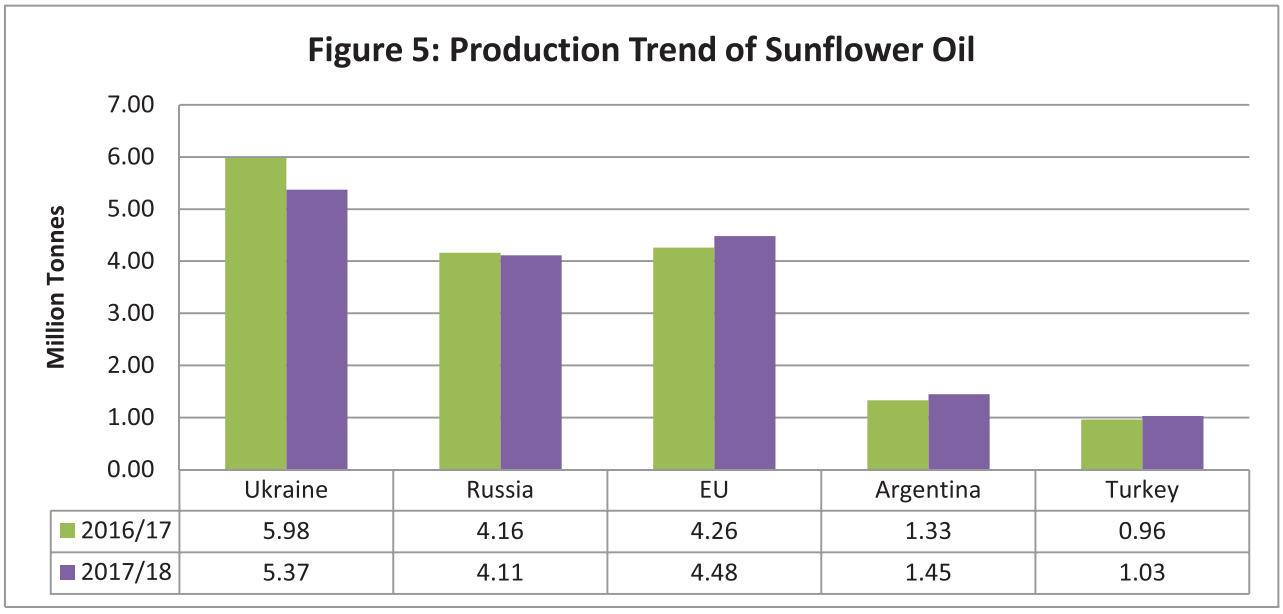


	European Union	China	Canada	India	Japan
2016/17	10.20	7.06	4.02	2.20	1.06
2017/18	10.45	6.82	4.02	2.10	1.07

Source: United States Department of Agriculture

- European Union (EU) is expected to be the top producer followed by China and Canada in 2017-18. India may be the fourth largest producer.
- India's share in global production of mustard oil in 2017-18 may be around 8 percent.

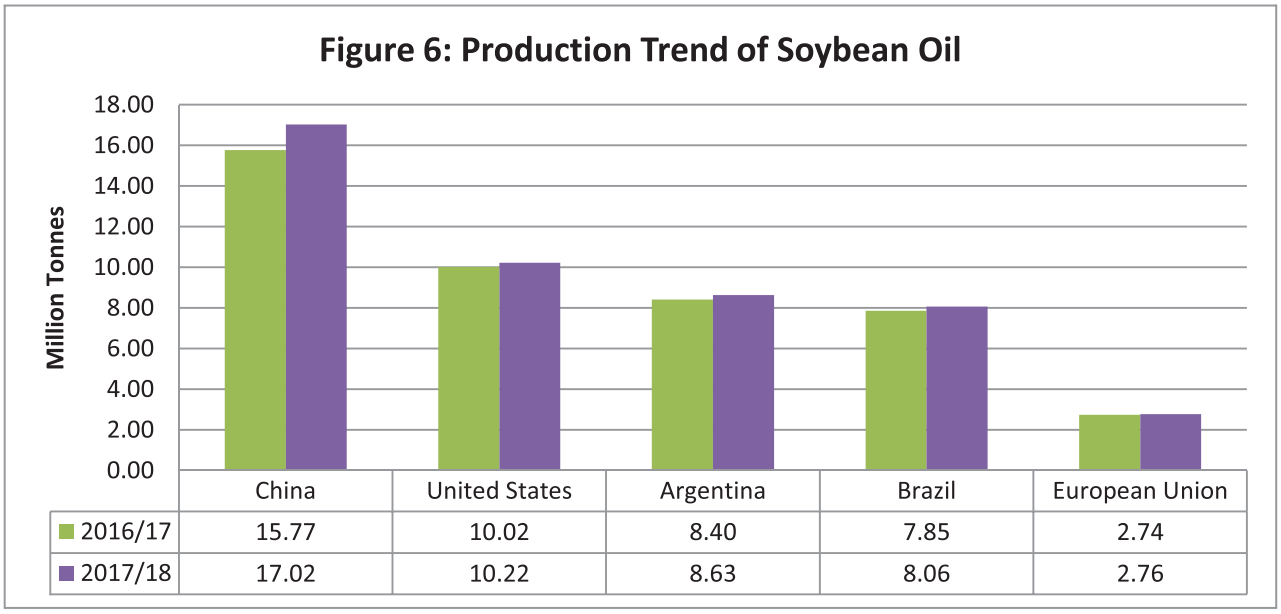
C) Sunflower oil



Source: United States Department of Agriculture

- Ukraine is expected to be the largest producer followed by Russia and EU in 2017-18.
- India's share in global production of sunflower oil in 2017-18 may be around 4.0 percent.

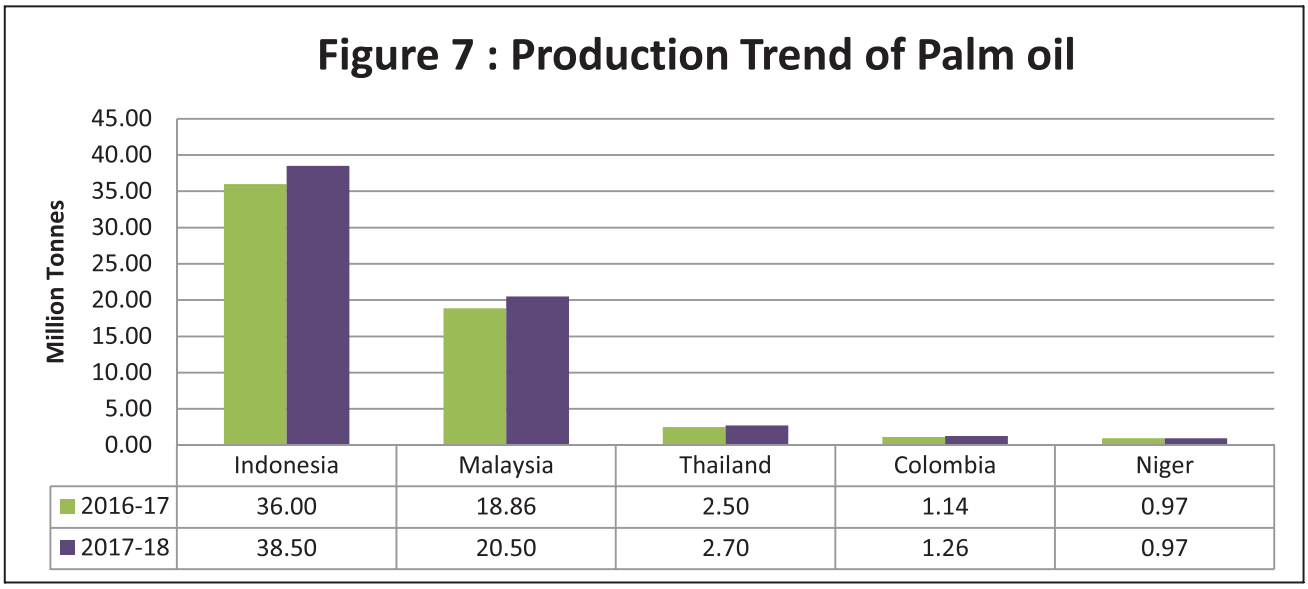
D) Soybean oil



Source: United States Department of Agriculture

- China, United States, Argentina and Brazil are expected to be the key producers of Soybean oil in 2017-18.
- India's share in global production of Soybean Oil in 2017-18 may be around 3 percent.

E) Palm Oil



	Indonesia	Malaysia	Thailand	Colombia	Niger
2016-17	36.00	18.86	2.50	1.14	0.97
2017-18	38.50	20.50	2.70	1.26	0.97

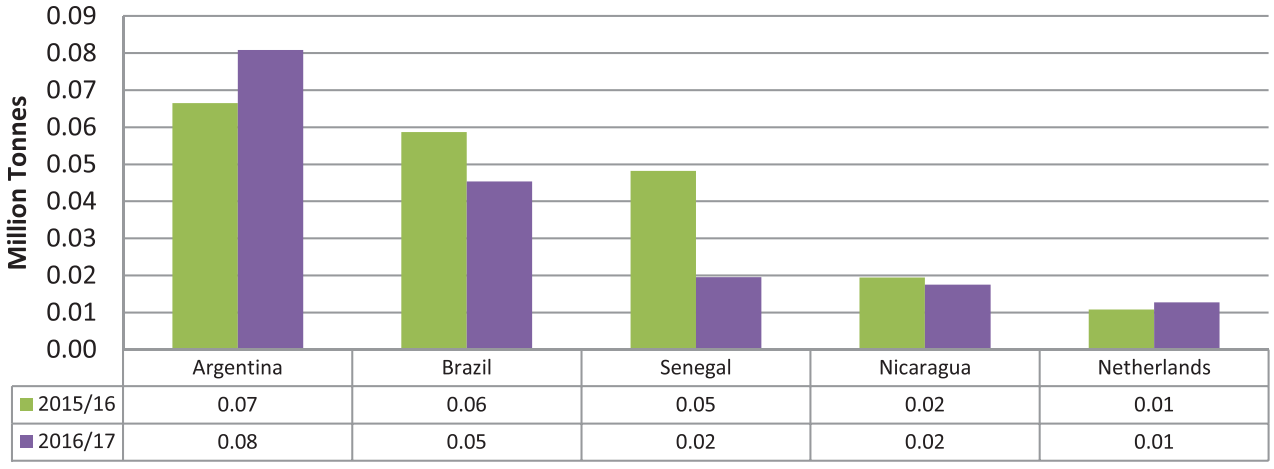
Source: United States Department of Agriculture

- Indonesia and Malaysia are major Palm oil producers in the world.

6. Major Exporting and Importing Countries of Edible Oils

A. Groundnut oil

Figure 8: Major Exportering countries of Groundnut Oil

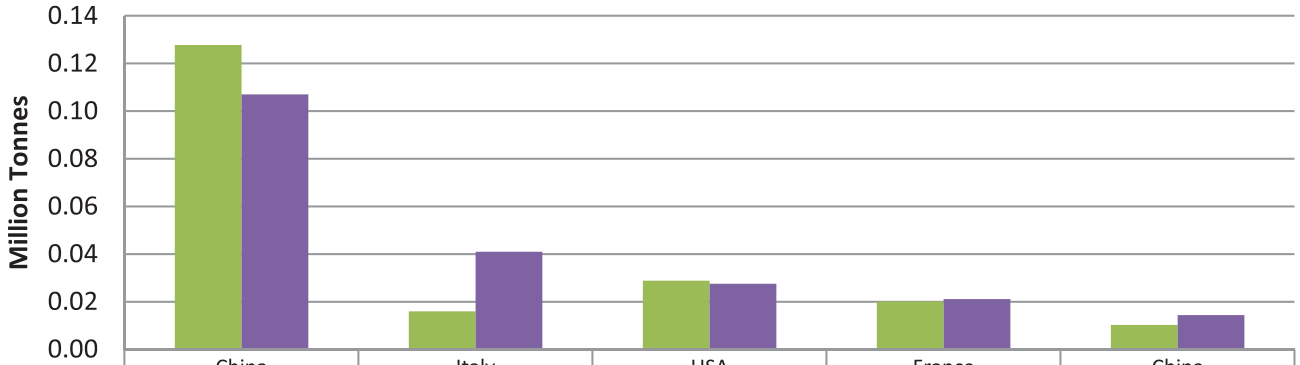


	Argentina	Brazil	Senegal	Nicaragua	Netherlands
2015/16	0.07	0.06	0.05	0.02	0.01
2016/17	0.08	0.05	0.02	0.02	0.01

Source: Comtrade

- Argentina and Brazil were the top two exporting countries of Groundnut oil in 2017-18.

Figure 9: Major Importering countries of Groundnut Oil

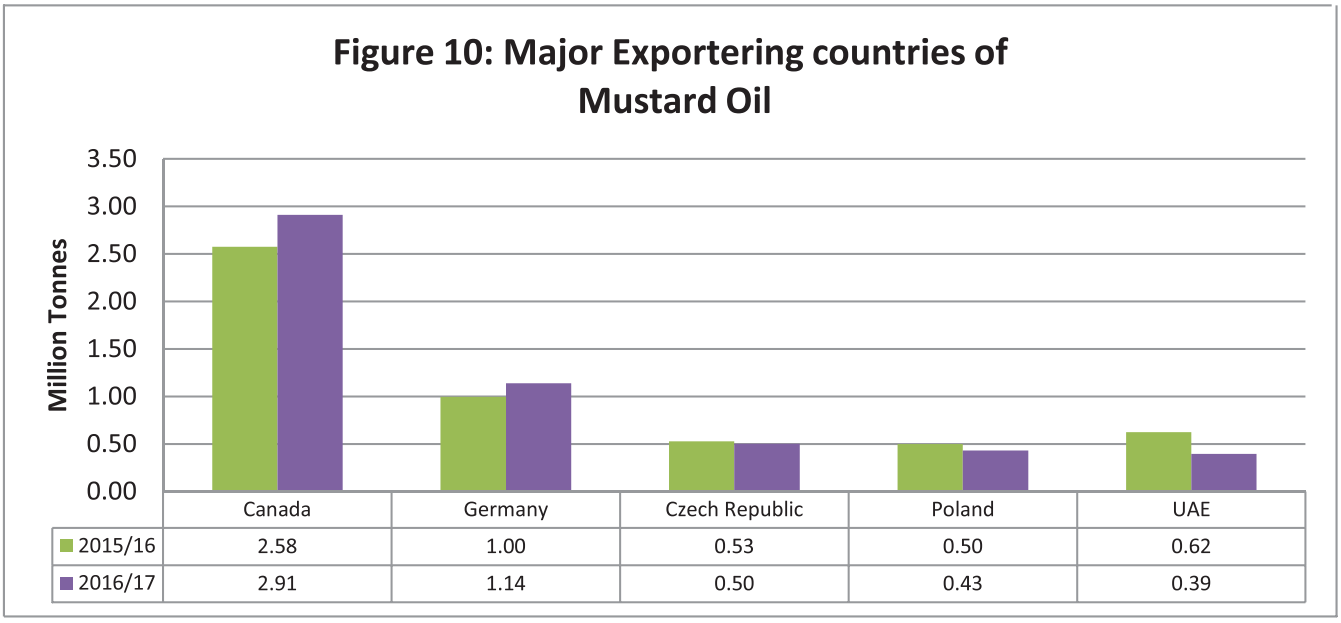


	China	Italy	USA	France	China
2015/16	0.13	0.02	0.03	0.02	0.01
2016/17	0.11	0.04	0.03	0.02	0.01

Source: Comtrade

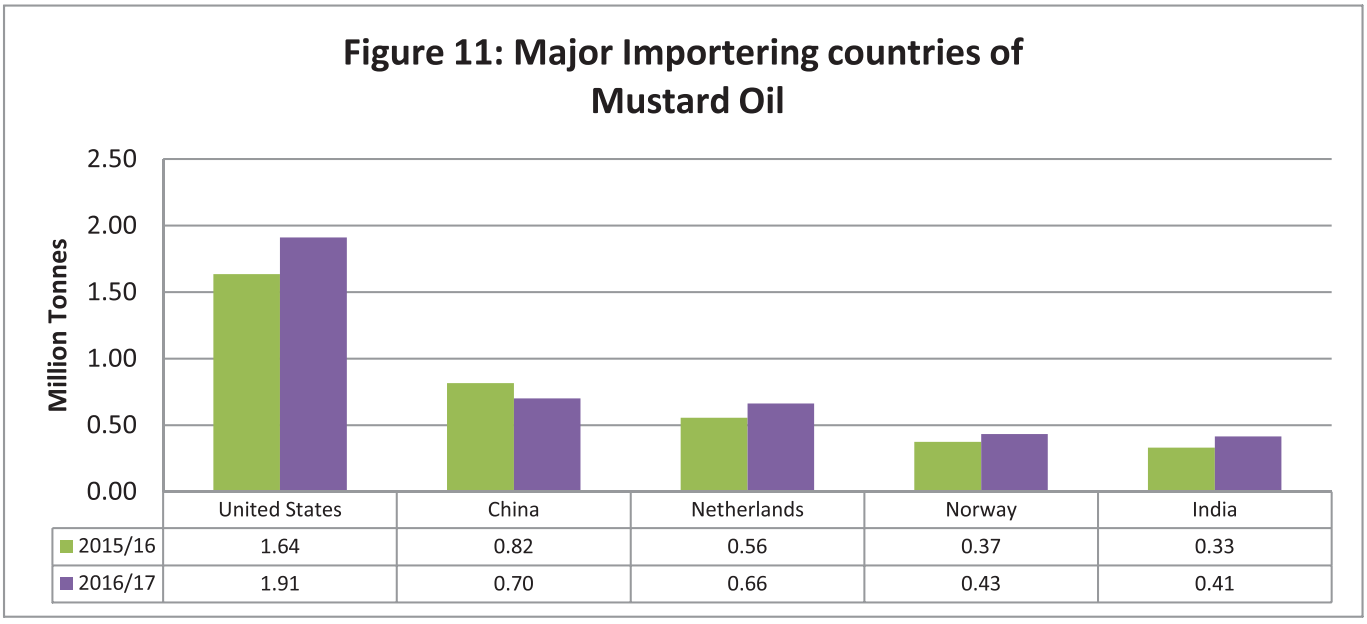
- China and Italy were the major importing country of groundnut oil in 2017-18.

B. Mustard oil



Source: Comtrade

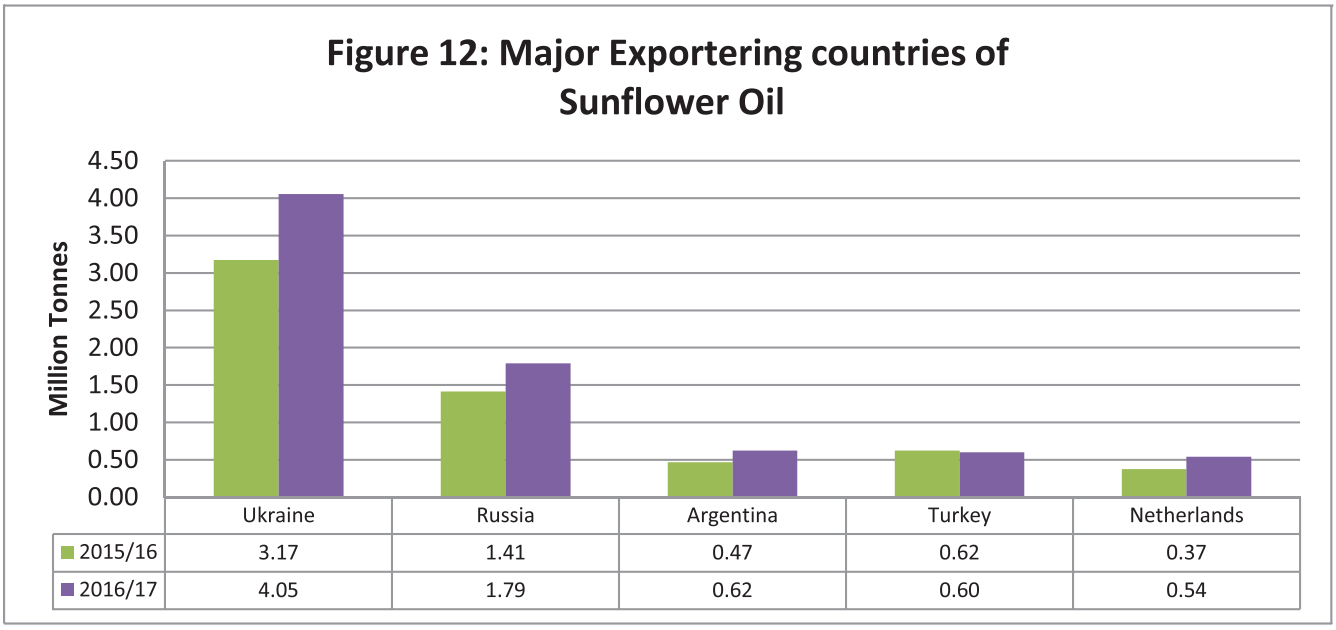
- Canada was the largest exporter of Mustard oil in the world followed by Germany and Czech Republic in 2017-18.



Source: Comtrade

- The USA and China were the leading importing countries of Mustard oil in the world. India was the 5thlargest importing country in 2017-18.

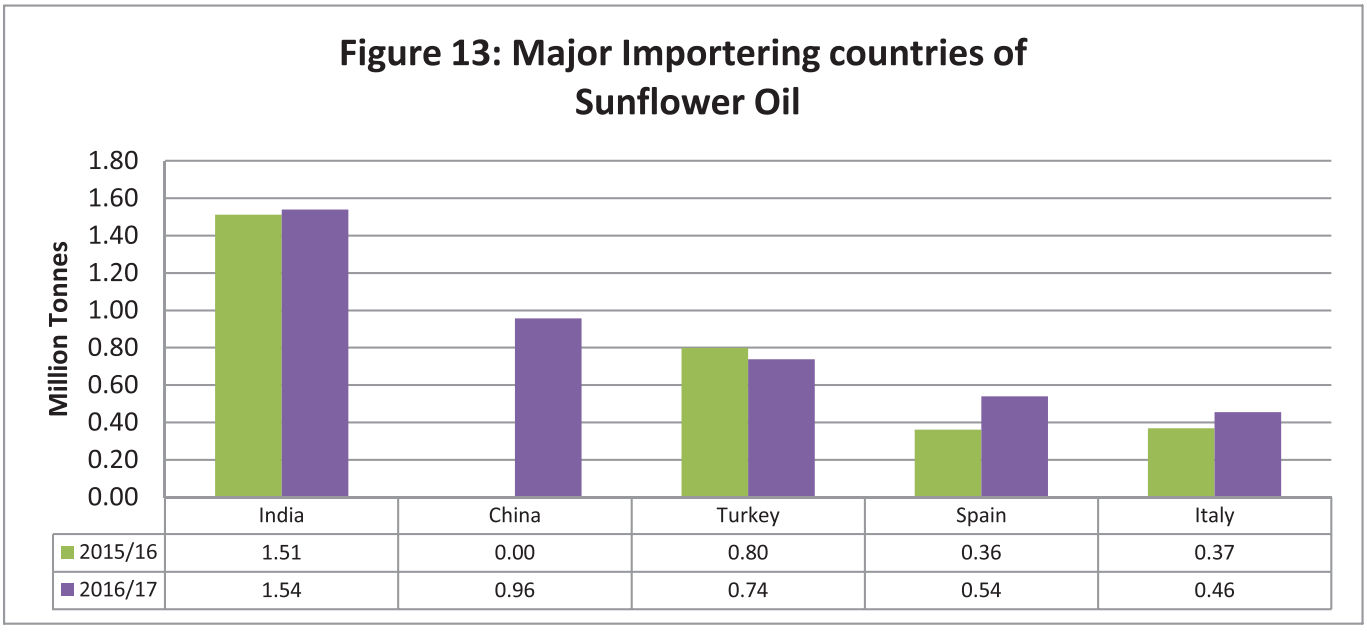
C. Sunflower oil



	Ukraine	Russia	Argentina	Turkey	Netherlands
2015/16	3.17	1.41	0.47	0.62	0.37
2016/17	4.05	1.79	0.62	0.60	0.54

Source: Comtrade

- Ukraine and Russia were the top two global exporters of sunflower oil during 2016-17.

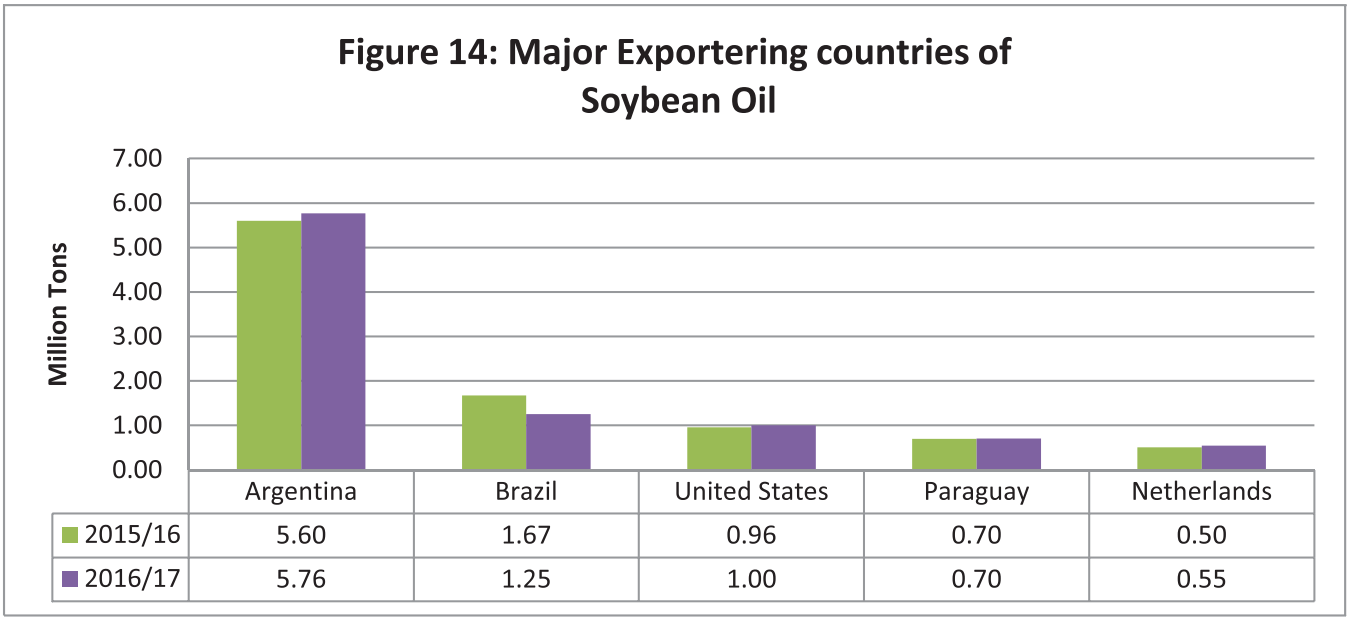


	India	China	Turkey	Spain	Italy
2015/16	1.51	0.00	0.80	0.36	0.37
2016/17	1.54	0.96	0.74	0.54	0.46

Source: Comtrade

- India was the largest importer of Sunflower oil followed by China, Turkey, and Spain during 2016-17.

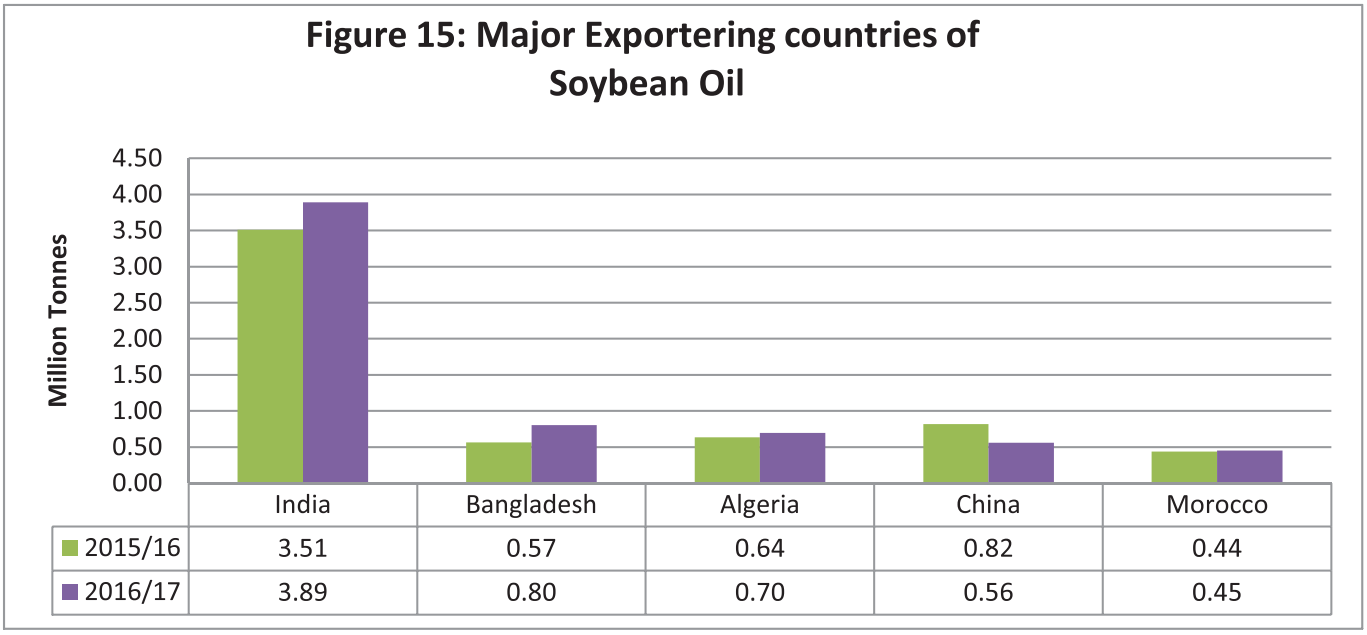
D. Soybean oil



	Argentina	Brazil	United States	Paraguay	Netherlands
2015/16	5.60	1.67	0.96	0.70	0.50
2016/17	5.76	1.25	1.00	0.70	0.55

Source: Comtrade

- Argentina was the largest exporting country in the world followed by Brazil, USA, and Paraguay during 2016-17.



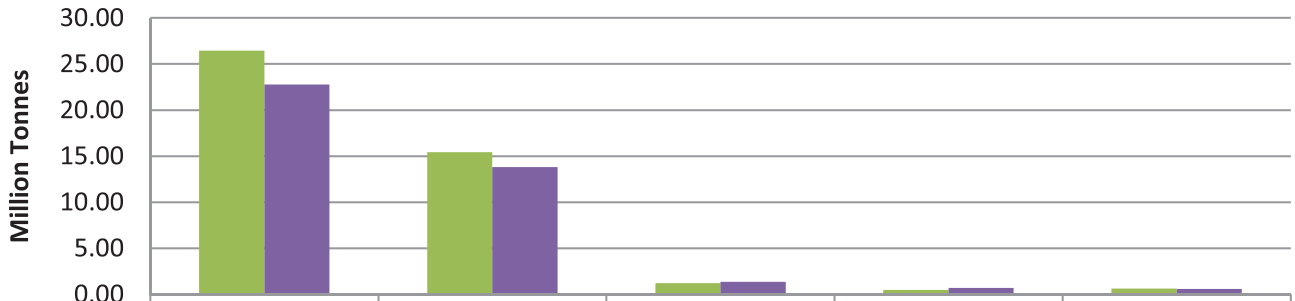
	India	Bangladesh	Algeria	China	Morocco
2015/16	3.51	0.57	0.64	0.82	0.44
2016/17	3.89	0.80	0.70	0.56	0.45

Source: Comtrade

- India was the largest importer of soybean oil that constituted 29.89 percent of the global import in the year 2016-17.

E. Palm oil

Figure 16: Major Exportering countries of Palm Oil

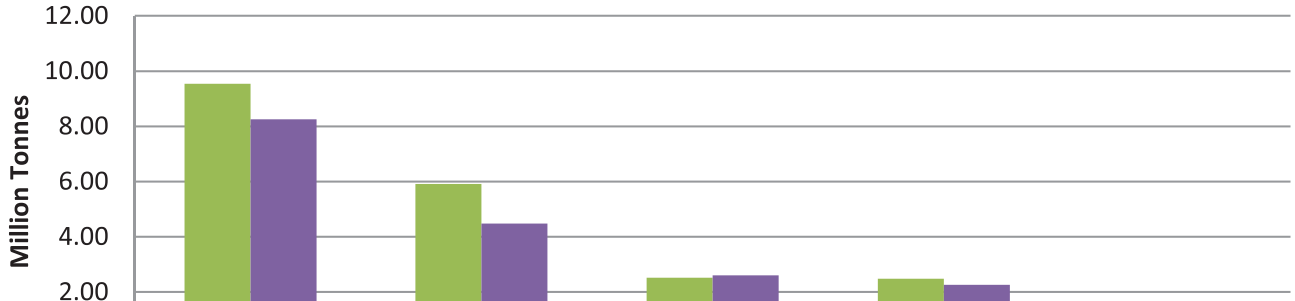


	Indonesia	Malaysia	Netherlands	Guatemala	Papua New Guinea
2015/16	26.47	15.43	1.19	0.47	0.60
2016/17	22.76	13.81	1.34	0.69	0.57

Source: Comtrade

- Indonesia and Malaysia hold both competitive as well as comparative advantage in exportation of Palm oil in the world.

Figure 17: Major Importering countries of Palm Oil



	India	China	Pakistan	Netherlands	Italy
2015/16	9.54	5.91	2.52	2.48	1.64
2016/17	8.25	4.48	2.60	2.27	1.52

Source: Comtrade

- India is the largest importer of Palm oil in the world followed by China, Pakistan and Netherland.

7. India's import of major edible oils

(Qty in Million Tonnes, Value in Rs. Crores)

Table 3:India's Import of Major Edible Oils during 2012-13 to 2016-17								
Year	**Soybean Oil**		**Palm Oil**		**Sunflower Oil**		**all edible oils**	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
2012-13	1.1	7611	8.4	43924	1.1	7619	7.08	53561
2013-14	1.3	8307	7.6	39353	1.1	6881	9.60	44038
2014-15	2.3	12907	8.1	38881	1.7	9555	7.94	64893
2015-16	3.9	19413	9.6	37783	1.4	8326	15.64	68676
2016-17	3.5	18730	8.3	41081	1.7	9391	14.01	73047
2017-18 (Apr- Oct)	2.3	11863	5.8	26774	1.2	6360	9.53	46629

Source: Department. Of commerce

- India imports substantial amount of edible oils for its domestic consumption. Among all edible oils importation into India, Palm oil importation share is around 60 percent.

8. India's top import sources of Palm, Soya and Sunflower Oils

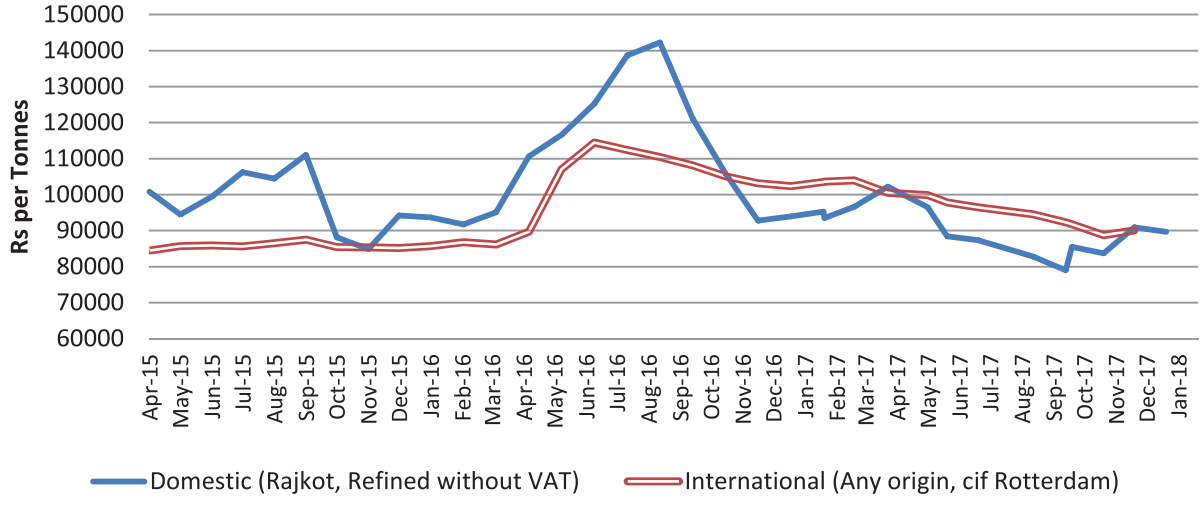
Table 4: India's Top Import Sources of Palm, Soya and Sunflower Oils	
Edible Oils	**Import Source**
Soybean Oil	Argentina and Brazil
Palm Oil	Indonesia and Malaysia
Sunflower	Ukraine and Argentina

Source: Department of Commerce

9. Movement of Domestic and International Edible Oils Prices

I. Groundnut oil

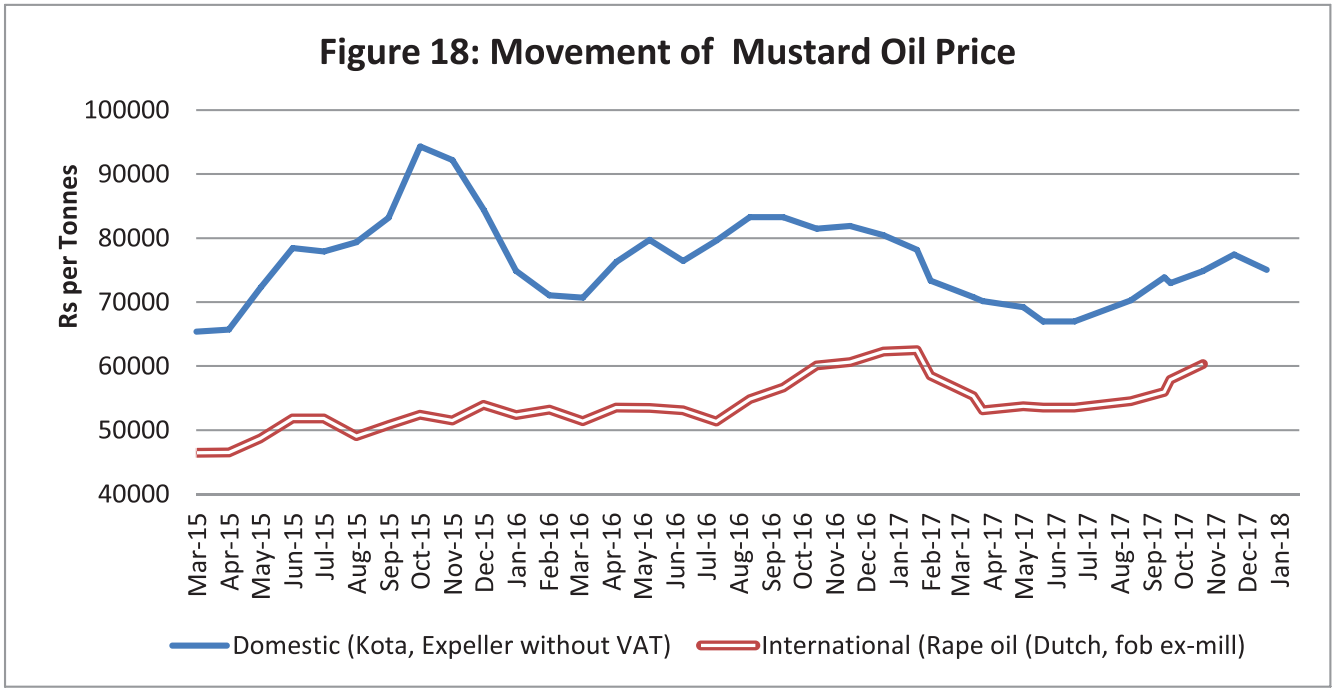
Figure 17: Movement of Groundnut Oil Price



Source: Domestic Price Agriwatch and International Price are FAO Prices.

- Domestic prices of Groundnut oil are showing decreasing trend from April, 2017.

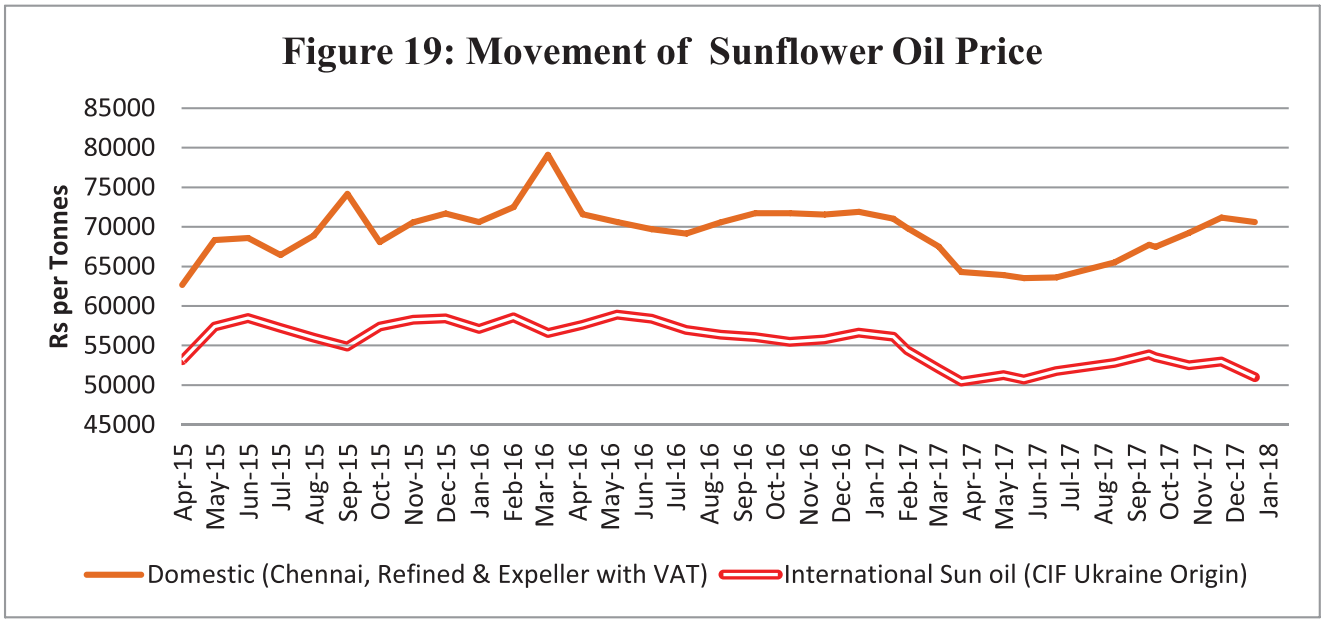
II. Mustard oil



Source: Domestic Price Agriwatch and International Price are FAO Prices.

- Domestic price of Mustard Oil is higher than that of International prices throughout the years.

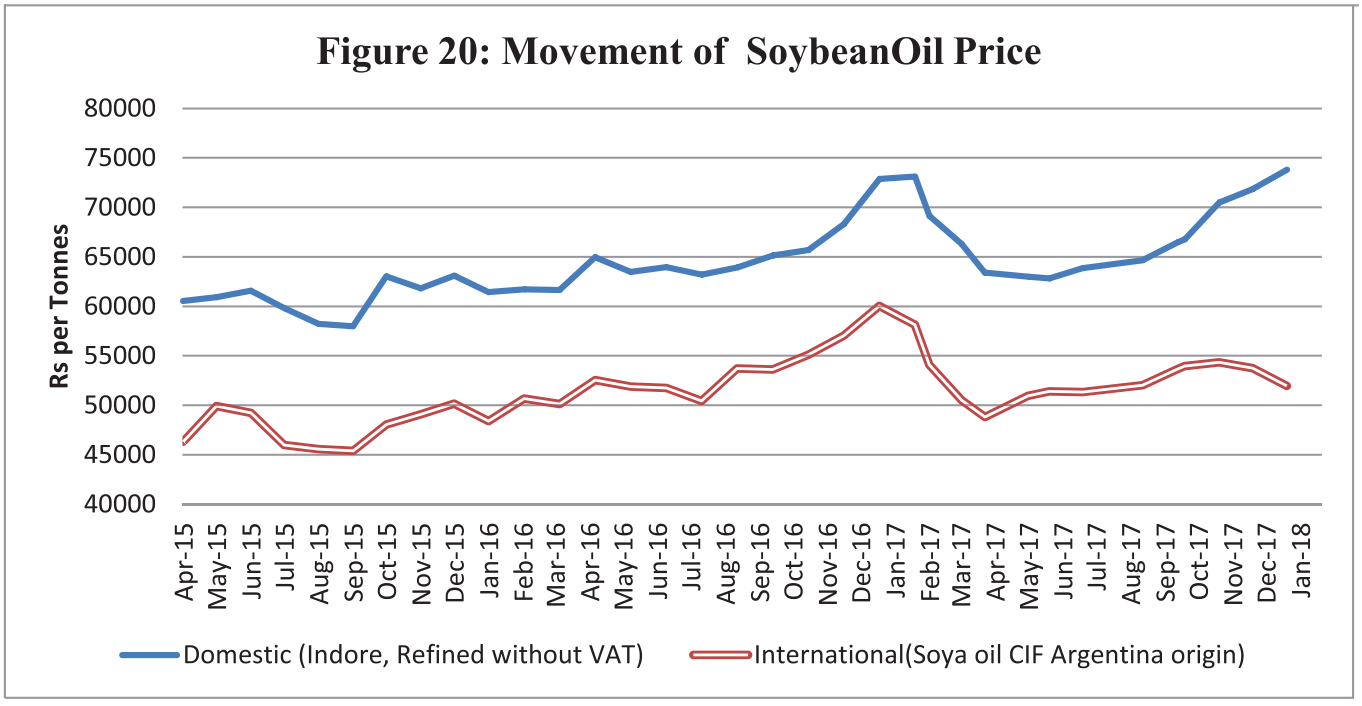
III. Sunflower oil



Source: Domestic Price Agriwatch and International Price are CIF Ukraine origin Prices.

- Domestic prices of Sunflower oil are higher that International prices throughout.

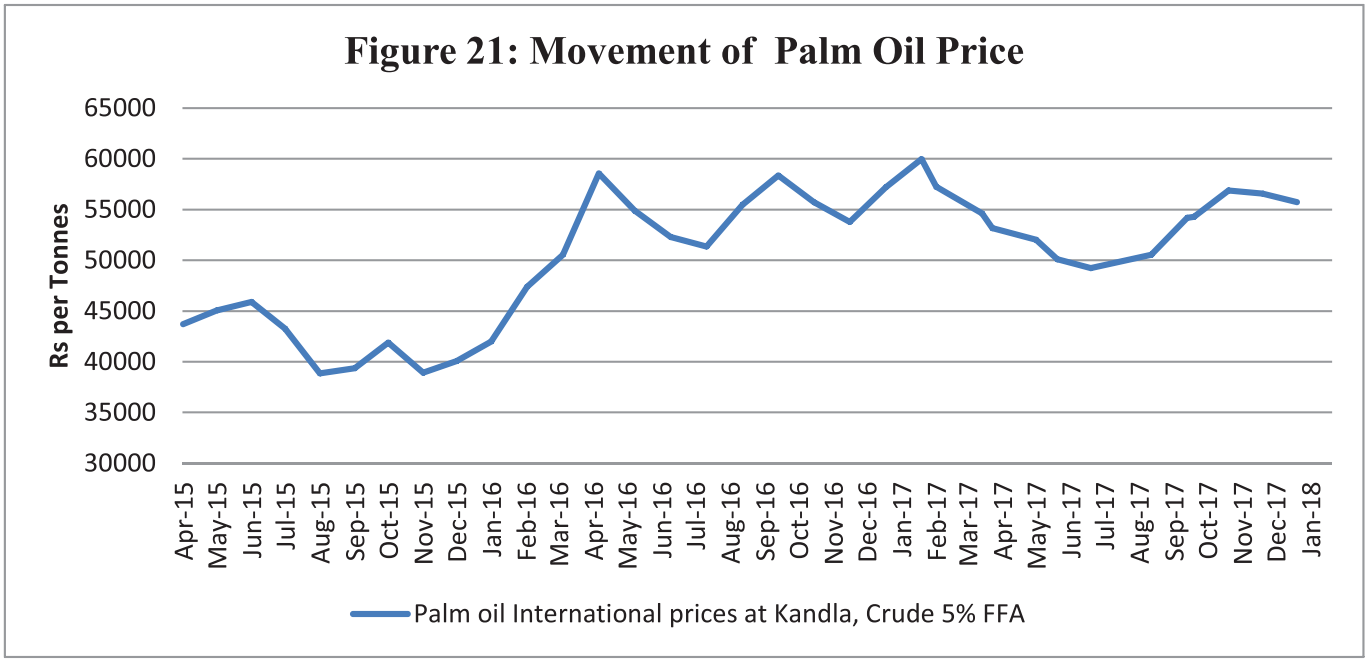
IV. Soybean oil



Source: Domestic Price Agriwatch and International Price are CIF Argentina origin Prices.

- Domestic price of soybean oil are higher than International prices throughout period.

V. Palm oil



Source: International landing Price at Kandla, Agriwatch.

- International price of palm oils are showing a mixed trend.

10. Domestic future prices of Soya bean and Palm oil

Unit: Rs/Quintal

Table – 5: Soya bean oil future prices							
Contract Month	As on 08.02.18	Week ago 01.02.18	Month ago 08.01.18	3 Months ago 08.11.17	6 Months ago 08.08.17	Year ago 08.02.17	% Change over previous year
Feb-18	7400	7495	7424	7312	-	7052	**4.93**
Mar-18	7461	7515	7422	7312	-	6933	**7.62**
Apr-18	7468	7459	7386	7312	-	6840	**9.19**

Source: National Commodity & Derivatives Exchange Limited

- Domestic future price for Crude Soya bean oil is expected to increase over the previous year.

Unit: Rs/Quintal

Table – 6: Crude Palm oil future prices							
Contract Month	As on 08.02.18	Week ago 01.02.18	Month ago 08.01.18	3 Months ago 08.11.17	6 Months ago 08.08.17	Year ago 08.02.17	% Change over previous year
Feb-18	5724	5703	5607	-	-	5822	**-1.68**
Mar-18	5761	5747	5712	-	-	5709	**0.91**
Apr-18	5783	5772	5747	-	-	5620	**2.90**

Source:Multi Commodity Exchange of India Ltd

- Domestic future price for Crude Palm oil is showing a mixed trend.

11. International future prices of Soya bean and Crude Palm Oil

Unit: USD/Ton

Table – 7: Soya bean oil future prices							
Contract Month	As on 08.02.18	Week ago 01.02.18	Month ago 08.01.18	3 Months ago 1.11.17	6 Months ago 08.08.17	Year ago 08.02.17	% Change over previous year
Mar-18	362.30	360.83	355.31	370.38	353.84	387.65	**-6.54**
May-18	366.34	365.24	359.36	373.69	353.84	391.32	**-6.38**
July-18	370.01	368.54	363.03	376.63	353.84	394.26	**-6.15**
Aug-18	371.11	369.28	364.13	376.63	353.84	392.79	**-5.52**

Source: CME Soybean Oil Prices

- International future prices of Soya bean are expected to decrease over the last year.

Unit: USD/Ton

Table – 8: Palm oil future prices							
Contract Month	As on 02.02.18	Week ago 25.01.18	Month ago 02.01.18	3 Months ago 02.11.17	6 Months ago 02.08.17	Year ago 02.02.17	% Change over previous year
Feb-18	781.55	641.09	612.02	-	-	738.81	**5.79**
Mar-18	779.97	641.35	618.20	-	-	712.80	**9.42**
Apr-18	779.65	641.35	618.20	-	-	695.16	**12.15**

Source: BMD Malaysian Palm Oil Prices

- International future prices of Palm oil are to increase over the last year.

12. Trade Policy

12.1 Export Policy

At present, export of edible oils is prohibited*. The following exemptions are permitted from prohibition on export of edible oils:

a) Castor oil
b) Coconut oil from all EDI Ports and through all Land Custom Stations (LCS) on Indo-Nepal, Indo-Bangladesh, Indo-Bhutan and Indo-Pakistan borders.
c) Deemed export of edible oils(as input raw material) from DTA to 100% EOUs for production of non-edible goods to be exported
d) Edible oils from Domestic Tariff Area (DTA) to Special Economic Zones (SEZs) to be consumed by SEZ units for manufacture of processed food products, subject to applicable value addition norms
e) Edible oils produced out of minor forest produce, ITC (HS) Code 15159010, 15159020, 15159030, 15159040, 15179010 and 15219020.
f) Organic edible oil subject to export contacts being registered and certified as 'Organic' by Agricultural & Processed Food Products Export Development Authority (APEDA).#
g) Rice Bran oil bulk.**
h) Groundnut oil, Sesame oil, Soyabean oil and Maize (Corn) oil in bulk.##

*i) DGFT's Notification No 22 (RE – 2013)/2009-2014 dated 18 June, 2013)

ii) Export of edible oils in branded consumer packs of upto 5 Kgs is permitted with a Minimum Export Price of USD 900 per MT(vide DGFT's Notification No. 108 (RE–2013)/2009-14dated6th Feb, 2015)

iii) The prohibition will not apply to export of Peanut Butter, ITC (HS) Code 15179020.
(Source: DGFT)

** iv) Bulk export of rice bran oil is allowed vide DGFT's notification no. 17/2015-20 dt 6th Aug 2015.

(v) DGFT's Notification No. 43/2015-2020 dated 27th March, 2017.

(v) DGFT's Notification No. 3/2015-2020 dated 19th April, 2017.

12.2 Import Duty - Bound Duty, Standard Duty and Current Applied Duty

Table 9: Bound Duty, Standard Duty and Current Applied Duty				
HS Code	**Description**	**Bound Duty**	**Standard Duty**	**Current Applied Duty#**
15071000	Soya- bean Crude Oil	45	45	30*
15079010	Soya- bean Edible grade	45	45	35*
15079090	Soya- bean Other	45	45	35*
15081000	Groundnut oil crude	300	100	30^
15089010	Groundnut oil Deodorized	300	100	35^
15089091	Groundnut edible Grade	300	100	35^
15089099	Groundnut oil Other	300	100	35^
15091000	Olive oil virgin	45	45	30^
15099010	Olive Edible grade	40	40	35^
15099090	Olive Edible Other	40	40	35^
15111000	Palm Crude Oil	300	100	30*
15119010	Other refined bleached palm oil	300	100	40*
15119020	Other refined bleached Palmolein	300	100	40*
15119090	Other refined palm oil	300	100	40*
15121110	Crude sunflower-seed oil	300	100	25*
15121120	Crude safflower oil	300	100	30^
15121910	Sunflower oil edible Grade	300	100	35*
15121920	Sunflower oil Non-edible	300	100	35*
15121930	Saffola oil Edible	300	100	35^
15121940	Saffola Oil Non edible	300	100	35^
15121990	Saffola Oil Other	300	100	35^
15122100	Cotton Seed oil Crude	300	100	30^
15122910	Cotton Seed oil Edible	300	100	35^
15122990	Cotton Seed oil Other	300	100	35^
15131100	Crude coconut oil	300	100	30^
15131900	Other coconut oil	300	100	35^
15141110	Low erucic Colza oil	75	75	25*
15141120	Low erucic rape oil	75	75	25*
15141190	Low erucic other oil	75	75	25*
15141910	Refined colza oil of edible grade	75	75	35*
15141920	Refined rapeseed oil of edible grade	75	75	35*
15141990	Refined other rapeseed & Colza oil of edible grade	75	75	35*
15149110	Crude other Colza oil	75	75	25*
15149120	Crude other mustard oil	75	75	25*

15149190	Crude other Rapeseed oil	75	75	25*
15149910	Refined other colza oil of edible grade	75	75	35*
15149920	Refined other mustard oil of edible grade	75	75	35*
15149930	Refined other rapeseed oil of edible grade	75	75	35*
15149990	Refined other oil	75	75	35*
15151100	Linseed oil Crude	300	100	30^
15151910	Linseed oil Edible	300	100	35^
15151910	Linseed oil other	300	100	35^
15153010	Castor Oil Edible	100	100	35^
15153090	Castor Oil Other	100	100	35^
15155010	Seasame oil Crude	300	100	30^
15155091	Seasame oil Edible	300	100	35^
15155099	Seasame oil Other	300	100	35^

Source: DGFT, Department of Revenue, Government of India and World Trade Organisation (WTO)

*Current Applied Duty on Crude Soybean has been increased from 17.5% to 30% and on refined Soybean oil from 20% to 35%. Current Applied Duty on Crude Sunflower oil has been increased from 12.5 % to 25% and on refined Sunflower oil from 20% to 35%. Current Applied Duty on Crude Palm has been increased from 15% to 30% and on refined Palm oil from 25% to 40%. Current Applied Duty on Crude Rapeseed oil including canola oil, mustard oil and colza oil has been increased from 12.5% to 25% and on refined Rapeseed oil including canola oil, mustard oil and colza oil from 25% to 35 % by Department of Revenue vide Notification No. 87/2017-Customs dated 17.11.2017.

^ BCD on crude edible vegetable oils namely Ground nuts, Olive oil, cotton seed oil, safflower seed oil, coconut oil, linseed oil, maize corn oil, castor oil, sesame oil, other fixed veg fats and oils have been raised from 12.5% to 30%. BCD on refined vegetable oils namely Ground nuts, Olive oil, cotton seed oil, safflower seed oil, coconut oil, palm kernel/ Babassu oil, linseed oil, maize corn oil, castor oil, sesame oil, other fixed veg fats and oils, edible margarine, sal fat, modified linseed oil, modified castor oil, have been raised from 20% to 35% by Department of Revenue vide Notification No. 6/2018-Customs dated 02.02.2018.

13. Significant Changes for the month: BCD on crude edible vegetable oils namely Ground nuts, Olive oil, cotton seed oil, safflower seed oil, coconut oil, linseed oil, maize corn oil, castor oil, sesame oil, other fixed veg fats and oils have been raised from 12.5% to 30%. BCD on refined vegetable oils namely Ground nuts, Olive oil, cotton seed oil, safflower seed oil, coconut oil, palm kernel/ Babassu oil, linseed oil, maize corn oil, castor oil, sesame oil, other fixed veg fats and oils, edible margarine, sal fat, modified linseed oil, modified castor oil, have been raised from 20% to 35% by Department of Revenue vide Notification No. 6/2018-Customs dated 02.02.2018.

Health News

The FDA wants to stop soy products from being marketed as heart healthy

For over two decades, the US Food and Drug Administration has been telling the public that the soy protein found in vegan favourites such as tofu and plant-based burger patties helps reduce the risk of heart disease. Since 1990, the agency has allowed food companies to market this health claim on the labels of soy protein-based products. On Wednesday (Nov. 1) the agency announced it wants to revoke that authorization.

In recent years, new research has emerged that challenges the long-held belief that soy is especially good for the heart. To be clear, the science doesn't link soy protein with increased risk of heart disease; it just says there's a good chance it doesn't do much to help, either.

Because of the contradictions—and requests from nutrition groups to reevaluate its claim—the FDA's Center for Food Safety and Applied Nutrition decided to review the science again.

"Our review of that evidence has led us to conclude that the relationship between soy protein and heart disease does not meet the rigorous standard for an FDA-authorized health claim," the agency said in a statement.

The distinction puts a sizable dent in the marketing power behind soy-food brands, especially those touting their products as more healthful alternatives to meat. One of the primary concerns health experts have voiced about red and processed meats are their links to cardiovascular disease. The FDA decision takes a pretty valuable arrow out of the marketing quivers of those vegan food companies.

As expected, the Soy Foods Association criticized the FDA's decision and pointed out that 12 other countries still stand behind the claim, including Canada, Brazil, Japan, South Korea, and Chile.

To fully put an end to labels that claim soy can reduce heart disease risk, the FDA first must go through an official revocation process. That process will give the public, including industry stakeholders, a chance to submit comments to the agency to try and persuade it to keep the authorization or more forward in ditching it. The comment period will close Jan. 18.

Perhaps the public won't really care, posits Michele Simon, who leads the Plant Based Foods Association, another industry trade group. Simon says the real value of soy protein is in reducing meat consumption. "What are consumers really interested in? They are not necessarily buying plant-based tofu products because they reduce the risk of heart disease."

Source : Quartz Media

KFC India to switch to rice bran oil

QSR restaurant chain KFC India said it will switch to rice bran oil as a cooking medium across its restaurants from early next year. The company said the move is part of its efforts to improve the nutrition profile of its food.

KFC is testing this initiative in select restaurants across Hyderabad, Bengaluru, Chennai and New Delhi. The company said it will make the switch from palm oil to rice bran oil across its restaurants in the country during the first quarter of 2018. The company said the rice bran oil will be sourced locally from Indian oil manufacturers.

In a statement, Rahul Shinde, Managing Director, KFC India, said, "As a brand, we continuously strive towards improving the nutrition profile of our high-quality food, without compromising on great taste. Looking at the benefits of rice bran oil, we had been testing it in select restaurants over the last few months and are now glad to make this shift across all our restaurants in the country."

The restaurant chain said it uses 3,600 tonnes of cooking oil every month across its 300-plus restaurants in India.

Source: http://www.thehindubusinessline.com

New research Says there's Genetic limit to how long we can live

A new paper published by a team of multidisciplinary researchers claim that humankind has reached a peak in physical development and lifespan. The limit is a product of genetic constraints, combined with environmental conditions.

Humanity's threshold

There's a limit to the human lifespan and physical abilities, and a multidisciplinary team of researchers say that we may have already reached this threshold. Sadly, it's one that we may not be able to exceed. Indeed, signs point to a plateau in maximum genetic and biological limits for a person's age, height, and physical capabilities.

This first-of-its-kind study, that covers over 120 years worth of historical information, was published recently in the journal Frontiers in Physiology. Instead of breaking through this threshold, there would be a shift in the proportion of people reaching the current threshold. In short, more people would be hitting the highest life expectancy but not exceeding it.

"[M]odern human potential, including an enlarged brain, adult height, lifespan, and physical performance, has

been dependent on very long-term evolutionary parameters," researchers Jean-François Toussaint and Adrien Marck from the Paris Descartes University in France told Futurism.

Furthermore, when combined with anthropogenic factors — or our effect on the environment — this threshold might even see decrease. "All human biomarkers (renal filtration, respiratory rate, lifespan, etc) depend on both genetic predispositions and environmental parameters, with risk factors possibly limiting the function/performance of each studied organ/organism," Toussaint and Marck explained. "A positive environment further favors functional quality, while increased constraints limit it."

Pushing the Genetic limits?

The new study is hardly the first to conclude that humankind has reached its limits, particularly when it comes to lifespan. Earlier in September, researchers from the Netherlands published a study that pegged the maximum human age limit to 115 years.

Toussaint and Marck are aware of efforts to prolong human life. They actually group these projects into two kinds, those that work to prolong our "healthy time" and those that seek to simply extend human lifespan. They praise the former, but they aren't too keen on the latter. Researchers involved in the prolonging healthy life, they explained, are already aware of the genetic constraints presented in their study.

"However, if we consider the community that supports the idea that, in the near future, humans may live 200 years, 500 years or more, it is easy to show that these persons usually perform mathematical projections without any biological and environmental considerations," they told Futurism. "They also have reductionist approaches that don't take into account either the complexity of the interactions between individuals and their environment, or the multi-level interactions."

Despite this, though, longevity research have been showing quite favorable results. Admittedly, a number of these are still in their early stages. However, another idea that's potentially worth exploring is the use of gene editing tools to clip the factors that trigger aging, such as certain genetic mutations.

Toussaint and Marck had this to say about it: "Many people dream about the new possibilities offered by gene-editing techniques such as CRISPR/Cas9. These, however, raise a lot of biological and ethical questions. Can we really improve such technology to prevent the present side effects and really edit or safely drive our biological systems?"

"Even if we progress in editing reliability, it will still be complicated to use CRISPR/Cas9 without short-term or remote effects linked to these aspects. And long-term effects are only known…after the long term," they added. "Finally, despite all technological evolutions [sic], the plateau dilemma still remains as the rules of the living will continue to prevail. New organisms of a new species (Homo sapiens 3.0? 4.0? 0.0?) will maintain limits in terms of height, longevity or physical performances – maybe at a higher level — but they will unquestionably peak. Trees don't reach the sky."

This might leave the reader's sense of utopic progress to everlasting life, brought to us by science, downtrodden and lost to puerile fantasy, but he or she can still take solace in the potential of humanity's future maturation. In other words, we might get our act together enough to improve limits implied by our degenerating environment.

In the same way that environmental factors have contributed to setting humanity's limit, these could also push that limit further. "Are we able to reverse such a process and how? Obviously, it will take some time when we look at what is at stake and what has already been done which cannot be easily reversed," Toussaint and Marck explained to Futurism. "If we consider the time scales just for CO2, and the changes it produces to global heat or the sea level, these impacts will last for millennia."

And the two go on: "If we remain optimistic and consider that it is still possible to reverse the major deleterious effects of human anthropogenic activities (climate and all others), there is no reason to believe that average lifespan or any activity index may not increase again until they reach another plateau at their highest potential value," they added.

References : EurekAlert!, Frontiers in Physiology

Canola oil may worsen memory

Canola oil is regularly promoted as a healthful cooking fat. A new study, however, suggests that it could be more harmful than helpful — particularly for the brain.

Researchers found that a diet rich in canola oil worsened memory in mouse models of Alzheimer's. By studying mouse models of Alzheimer's disease, researchers found that a diet rich in canola oil exacerbated memory problems over 6 months, and it also led to weight gain.

Senior study investigator Dr. Domenico Praticò, of the Lewis Katz School of Medicine at Temple University in Philadelphia, PA, and colleagues recently reported their results in the journal Scientific Reports.

Canola oil is a type of vegetable oil that comes from rapeseed, or Brassica napus, which is a yellow flowering

plant that belongs to the cabbage family.

The very first commercially consumable form of canola oil was developed by Canadian researchersin the 1970s. Unlike some forms of rapeseed oil, canola oil is low in erucic acid, an omega-9 fatty acid that some research has linked to cardiovascular problems and cancer.

Canola oil is also low in saturated fats and high in polyunsaturated fats, which can lower cholesteroland protect the heart.

In fact, studies claim that canola oil "can now be regarded as one of the healthiest edible vegetable oils in terms of its biological functions and its ability to aid in reducing disease-related risk factors and improving health."

With such glowing reports, it is no wonder that canola oil has become one of the most commonly consumed oils in the United States.

"Canola oil is appealing because it is less expensive than other vegetable oils, and it is advertised as being healthy," notes Dr. Praticò. "Very few studies, however, have examined that claim, especially in terms of the brain."

Canola oil and Alzheimer's

For their study, Dr. Praticò and his colleagues sought to find out more about how canola oil affects brain health. More specifically, using 6-month-old mouse models, they looked at how the vegetable oil influences the pathology of Alzheimer's disease.

Alzheimer's disease is the most common form of dementia, and it is characterized by problems with learning and memory.

While the precise causes of Alzheimer's remain a mystery, it is believed that clumps of amyloid-beta protein, or "plaques," play a role in the disease.

The researchers wanted to find out how a diet rich in canola oil influences the formation of amyloid-beta plaques, as well as how it affects learning and memory.

The team divided its Alzheimer's mouse models into two groups. One group was fed a canola-rich diet, which incorporated the human equivalent of two teaspoons of canola oil daily, and the other group was fed a normal diet. Both groups were monitored for 6 months.

At the age of 1 year, both groups of mice completed a maze test, which assessed their learning and memory skills.

Canola oil increased plaque formation

Compared with mice fed a normal diet, the researchers found that mice fed a diet rich in canola oil experienced weight gain and significantly worse working memory.

Interestingly, the rodents fed canola oil showed reductions in a form of amyloid-beta called 1-40, which was associated with an increase in the formation of amyloid-beta plaques and damage to synapses, the structures responsible for communication between brain cells.

The researchers note that the reduction in amyloid-beta 1-40 leads to a greater abundance of amyloid-beta 1-42.

"Amyloid-beta 1-40 neutralizes the actions of amyloid 1-42, which means that a decrease in 1-40, like the one observed in our study, leaves 1-42 unchecked," explains Dr. Praticò. "In our model, this change in ratio resulted in considerable neuronal damage, decreased neural contacts, and memory impairment."

Based on these results, the researchers speculate that long-term consumption of canola oil is unlikely to offer any benefits for brain health, and it may actually be harmful.

"Even though canola oil is a vegetable oil, we need to be careful before we say that it is healthy. Based on the evidence from this study, canola oil should not be thought of as being equivalent to oils with proven health benefits." - Dr. Domenico Praticò

The researchers now plan to conduct a shorter study with the aim of pinpointing the length of time that canola oil needs to be consumed for in order to affect amyloid beta.

The team also wants to investigate whether or not the brain effects of canola oil are limited to Alzheimer's disease.

"There is a chance," Dr. Praticò adds, "that the consumption of canola oil could also affect the onset and course of other neurodegenerative diseases or other forms of dementia."

Source : www.medicalnewstoday.com

Fasting Make People Smarter:

Intermittent fasting diets such as the popular 5:2 could improve memory and learning capabilities, finds study.

While this type of regime is typically associated with weight loss, new research on mice has revealed a link between eating every other day and better cognitive

function.

In these animals, fasting was found to cause changes in the brain that likely give neurons more energy, and enable them to grow more connections, the New Scientist reports.

Researchers from the National Institute of Aging looked at 40 mice, which were each given routines where they either ate nothing every other day, or ate normally – each category consumed the same number of calories.

Interestingly, the team found that the mice who fasted showed a 50 per cent increase in a brain chemical called BDNF; something which prior research has suggested plays a role in promoting the growth of nerve cells and improves overall cognitive functioning.

During periods of intermittent fasting, the body switches energy sources from glucose, made in the liver, to fat cells, which stimulate activity and cell growth in the brain, according to the study.

'When those stores are out, human, as well as animal bodies switch to fat stores, which are converted into compounds called ketones in the blood," says Mark Mattson, chief of the laboratory of neurosciences at the National Institute of Aging.

"Ketones act directly on the nerve cells to stimulate production of BDNF and may help optimise cognition, learning and memory building."

The results of the study found that the mice had better mental function that lasted between seven and 14 days.

They also appeared more alert and showed more activity in the areas of the brain responsible for learning and memory during the fasting period.

However, while this type of diet worked on mice, Mattson explains that it probably wouldn't have the same effects on humans.

Instead, previous research has shown that people adjust relatively easily to popular diets such as the 5:2, which require two days of fasting each week, the Daily Mail reports.

Courtesy : http://www.independent.co.uk

Health Canada trans-fat ban takes effect next year

Artificial trans fat will finally be off our plates, Heart & Stroke says, nearly 12 years after the move was recommended to the federal government.

Health Minister Ginette Petitpas Taylor announced Friday the final step to ban partially hydrogenated oils in all foods sold in Canada.

The oils are the main source of trans fats in foods that raise levels of low-density lipoprotein (LDL), or "bad" cholesterol and lower "good" cholesterol, which can take a toll on our heart health.

Trans fats are used in the production of pastries, other baked goods and some packaged goods to extend shelf life.

Eliminating the main source of industrially produced trans fat from the food supply will help to protect the health of Canadians, Petitpas Taylor said in a statement.

Canadian researchers estimate a ban could prevent 12,000 heart attacks in Canada over 20 years.

The ban will come into force one year from today on Sept. 15, 2018, to give the food industry enough time to find suitable alternatives, the regulator said.

It will apply to all foods sold in the country, including imported products and foods prepared and served in restaurants and food service establishments.

Heart & Stroke said it will reduce the number of heart attacks in Canada and save lives.

Heart & Stroke co-chaired a task force with Health Canada in 2006 that first recommended the ban.

In the U.S., manufacturers must ensure that their food products no longer contain trans fats unless otherwise authorized by June 18, 2018, the U.S. Food and Drug Administration says.

Source : CBC's Journalistic Standards and Practices

Black Cumin seed oil

Black cumin seed oil is extracted from the seeds of Nigella sativa, a plant native to southwest Asia (commonly called black cumin). Black cumin seed oil is also known as kalonji oil, nigella sativa oil. It is an amber-hued oil used in cooking and is said to offer a range of health benefits. One of the key components of black seed oil is thymoquinone, a compound with antioxidant properties.

Nigella sativa is a small flowering shrub with purple or white-tinged flowers that grows in Eastern Europe, the Middle East, and western Asia. While it may look unsuspecting, the shrub produces fruits that have tiny black seeds. These black seeds have been used in remedies for thousands of years.

Archaeologists even found black seeds in King Tut's tomb, emphasizing their importance in history for healing and protection. They're also used in cooking to add flavour to breads, curries, and pickles. When eaten, the seeds have a bitter flavour that's often compared to cumin or oregano. Some additional names for black seed oil are black caraway, black cumin, black onion seed and kalonji.

Black seed oil has been shown to have antioxidant properties. These can help relieve inflammation inside the body and on the skin. Herbs and supplements are not monitored by the FDA. Research and use reputable brands.

The physiochemical properties and fatty acid composition of black cumin seed are as given under in tables.

Constituants	Value
Moisture	9.61±0.14
Crude protein	20.69±0.84
Ash	4.04±0.29
Carbohydrate (by differnnce)	25.29
Crude far	40.37±1.70

Physicochemical properties of Nigella sativa seeds (g 100 g-1 dry weight)

Fatty-acids composition of the oil Nigella sativa seeds (Unit: relative peak area%)

Fatty acids	Percentage	Retention time (min)
Palmitic acid (C16:0)	12.538	8.74
Palmitoleic acid (C16:1)	0.250	9.18
Stearic acid (C18:0)	3.239	12.50
Oleic acid (C18:1)	24.135	13.17
Linoleic acid (C18:2)	54.970	14.74
Linolenic acid (C18:3)	0.181	17.07
Arachidic acid (C20:0)	0.338	19.56
Eicosenoic acid (C20:1)	1.722	20.6
Behenic acid (C22:0)	2.623	23.56
SFA	18.740	
UFA	81.259	
MUFA	26.107	
PUFA	55.151	
UFA / SFA	4.336	

Uses for Black Seed Oil

Black seed oil is touted as a remedy for conditions such as allergies, asthma, diabetes, headaches, high blood pressure, digestive disorders, and rheumatoid arthritis. In addition, black seed oil is said to boost the immune system, reduce inflammation, and fight infections. The oil is used topically for skin and hair concerns, such as acne, dry hair, psoriasis, hair growth, and dry skin.

The slightly bitter seeds are used as a flavouring or spice in Middle Eastern and Indian cuisine and are sometimes sprinkled on flatbread, naan bread, or bagels.

Benefits

Although research on the health effects of black seed oil is fairly limited, there's some evidence that it may offer certain benefits. Here's a look at several key findings from the available studies:

1. **Black seed oil had a stronger effect** on lowering lipids than the powder, but only the powder was able to also increase HDL cholesterol. For example, in a small study of 10 patients with high cholesterol, 1 g of black seed powder before breakfast for 2 months reduced all of the above blood lipids [R]. And in a study of 88 similar patients, 2 g of black seed capsules lowered cholesterol, LDL, and triglycerides after a month. The active ingredient in black cumin (thymoquinone)

prevented the hardening of arteries from high cholesterol in rabbits. Even on a high cholesterol diet, the treated rabbits maintained normal blood lipid levels and blood vessels

2. **Black Cumin Oil May Reduce Inflammation** - Black cumin seed (Thymoquinone) has promising anti-inflammatory properties and is good for both Th1 and Th2 dominance. However, only several small studies (with 4 and 1 patients) confirmed that black cumin oil can help with inflammatory conditions like arthritis. The anti-inflammatory effect can be attributed to the active ingredient, thymoquinone (based on animal studies) [R]. Black cumin seed essential oil reduced inflammation and pain in mice (R). It also reduced autoimmune brain inflammation in rats with Multiple Sclerosis .

   In rats with arthritis, the active ingredient, thymoquinone lowered numerous pro-inflammatory cytokines (including IL-6, IL-1ß, TNF alpha – Th1 cytokines) while increasing anti-inflammatory ones (IL-10) [R]. It may reduce brain inflammation by blocking NF-?B (R), one of the most important factors that lead to inflammation. It reduces inflammation by preventing the immune cells from creating more nitric oxide, which is overly produced in inflammation and autoimmune diseases [R].

3. **Black Cumin Oil Is an Antioxidant**

   Black cumin acts on many antioxidant pathways (according to numerous animal and cell studies)

- Increasing liver antioxidant enzymes, such as glutathione
- Protecting various tissues from oxidative injuries, such as the stomach, liver, kidneys, and blood vessels
- Lowering homocysteine

Black cumin extract also restored antioxidant enzymes (in red blood cells) in mice with malaria, helping to clear the parasite infection [R]. The oil neutralized harmful Reactive Oxygen Species (ROS) and brain injury in mice [R]. The exact benefits of its antioxidant activity in humans still remain to be researched.

4. **Black Cumin Oil May Reduce Anxiety**

   Black Cumin seeds decreased anxiety and improved mood and cognition in a study of 48 adolescent male volunteers after 4 weeks (RCT). The treated group took 1g of black cumin daily in capsule form.

   Black cumin extract reduced anxiety in mice, possibly by increasing serotonin levelsin the brain. It also reduced anxiety, fatigue, and increased thyroid function in mice . Black cumin seed calmed and protected the developing brain in rats, even those who were under stress [R]. Black cumin probably works to reduce anxiety thank to its active ingredient, thymoquinone, which increased GABA in mice.

5. **Black Cumin Oil May Help Fight Infections**

   Black cumin has been researched for fighting various bacteria, viruses, and parasites, but the majority of studies were in animals, microorganisms, or cells.

a) Antibacterial: Black Cumin seeds act against:

- Staphylococcus aureus, a common cause of skin infections.
- MRSA (methicillin-resistant Staphylococcus aureus), a big problem when it comes to hospital-acquired infections that are hard to treat.
- H.pylori, a common cause of stomach ulcers.
- The formation of “Biofilms” .

Black cumin oil can also be applied to the skin to prevent infections and relieve pain .

b) Antifungal: Black cumin seeds can also fight some fungal infections. Extracts are active against Candida albicans . Black cumin oil also protected against mold (aflatoxicosis) in rats, which could potentially help people with Chronic Inflammatory Response Syndrome.

c) Antiviral: Black Cumin seed safely improved symptoms and reduced viral load in patients with Hepatitis C in a study of 30 people [R]. In another study of 75 patients with hepatitis C, black cumin alone (500 mg) or combined with ginger (500 mg) had similar beneficial effects [R].

Black cumin helped fight the herpes-causing cytomegalovirus virus (CMV) in mice [R].

d) Antiparasitic: Black cumin helped clear a malaria-causing parasite in mice [R]. The oil may protect against a parasite that damages the liver in mice [R]. In test tubes, black cumin protected against several parasites that can cause serious gut issues in humans [R].

6. **Can Black Cumin Oil Fight Cancer?**

   The simple answer is: we don’t really know yet. Black cumin has mostly been studied in animal and cells when it comes to its cancer-fighting potential. The research we bring up is promising, but keep in mind that human studies are limited.

Black Cumin oil blocks tumour growth and spreading in rats. It seems to activate phase I and II detox genes. Black Cumin seed (Thymoquinone) reduced liver and bladder cancer in rats. In cells, it could kill cervical cancer, bone cancer, breast cancer, and stomach.

7. **Black Cumin Oil May Reduce Seizures**

Black cumin oil (Thymoquinone) reduced seizures in children with epilepsy in a pilot study (DB) of 22 children. Black cumin (Thymoquinone) also had an anti-seizure effect in mice. It probably reduces seizures by boosting GABA in the brain.

8. **Black Cumin Oil May Protect Against Radiation**

Black Cumin oil protected against the immune-suppressing and damaging effects of radiation in rats.

9. Rheumatoid Arthritis

Black seed oil may aid in the treatment of rheumatoid arthritis, according to a small study published in Immunological Investigations in 2016. For the study, 43 women with mild-to-moderate rheumatoid arthritis took black seed oil capsules or a placebo every day for one month.

The study results showed that treatment with black seed oil led to a reduction in arthritis symptoms (as assessed by the DAS-28 rating scale), blood levels of inflammatory markers, and the number of swollen joints.

10. **Allergic Rhinitis**

Black seed oil shows promise in the treatment of allergies. In a 2011 study published in American Journal of Otolaryngology, for instance, black seed oil was found to reduce the presence of nasal congestion and itching, runny nose, and sneezing after two weeks.

11. **Diabetes**

Black seed oil may be of some benefit to people with diabetes, according to a review published in Complementary Therapies in Medicine in 2015. Researchers analyzed previously published studies on the use of Nigella sativa for diabetes and concluded that it could improve blood sugar and cholesterol levels in diabetes models but noted that clinical trials are necessary to clarify the effects.

12. **Asthma**

Preliminary research suggests that black seed oil may offer benefits to people with asthma. For example, a study published in Phytotherapy Research in 2017 found that people with asthma who took black seed oil capsules had a significant improvement in asthma control compared with those who took a placebo.

13. **Obesity**

Black seed oil may reduce risk factors in women who are obese, according to a study. For the study, women consumed Nigella sativa oil or a placebo while following a low-calorie diet for eight weeks. At the study's end, weight, waist circumference, and triglyceride levels had decreased by more in the group that took the Nigella sativa oil.

14. **Possible Side Effects**

Very little is known about the safety of long-term use of black seed oil when used in amounts higher than what's normally found in food. However, there's some evidence that applying black seed oil directly to the skin may cause an allergic skin rash (known as allergic contact dermatitis) in some individuals.

According to a report, a component of black seed oil known as melanthin may be toxic in larger amounts.

In a case report, a woman developed fluid-filled skin blisters after applying Nigella sativa oil to the skin. She also ingested the oil and the report's authors state it is possible that the blisters were part of a systemic reaction (such as toxic epidermal necrolysis).

Black seed oil may slow blood clotting and increase the risk of bleeding. If you have a bleeding disorder or are taking medication that affects blood clotting, you shouldn't take black seed oil.

There's some concern that taking too much black seed oil may harm your liver and kidneys.

It's possible that black seed oil may interact with many common medications, such as beta-blockers and (Coumadin) warfarin. Stop taking black seed oil at least two weeks before scheduled surgery.

Pregnant women (or women trying to become pregnant) and breastfeeding women shouldn't use black seed oil.

Be sure to talk with your doctor if you're considering taking black seed oil. You shouldn't stop any of your medication without speaking with your doctor, or delay or avoid conventional treatment.

Black seed oil beauty benefits

Black seed oil has several applications and benefits for problematic skin conditions. The oil is found in many

health foods stores and pharmacies. Examples of applications for beauty and skin include:

- Acne: According to the Journal of Dermatology & Dermatologic Surgery, applying a lotion prepared with 10 percent black seed oil significantly reduced the incidence of acne after two months. Those who participated in the study reported 67 percent satisfaction.
- Hydrating hair: Black seed oil can be applied to human hair to soften it and promote shine.
- Psoriasis: Applying black seed oil has been shown to reduce the incidence of psoriasis plaques.
- Softening skin: Black seed oil has been added to oils and moisturizers to improve skin moisture and hydration.
- Wound healing: Application of black seed oil has been shown to reduce inflammation and the presence of bacteria to aid in wound healing. While it doesn't seem to be helpful in growing new collagen fibers, it does stimulate other growth factors to help the body create new, healthy skin.

Remember, black seed oil shouldn't replace prescription treatments that a doctor may give you. But it does have some beauty benefits that can work in addition to these treatments to enhance your skin.

While using black seeds in small amounts in cooking can be a tasty of way of incorporating the seeds in your diet, large-scale clinical trials are needed before the oil can be recommended as a treatment for any condition. If you're still thinking of using black seed oil for health purposes, be sure to speak with your healthcare provider first to weigh the pros and cons and discuss whether it's right for you.

Black Cumin Oil Synergies

Black Cumin seed (Thymoquinone) in combination with radiation had a stronger effect against breast cancer cells [R]. Garlic Extract and Black cumin oil may work better together to combat parasites [R]. Consumption of garlic extract and crude Black seeds may have beneficial antioxidant effects in healthy postmenopausal women [R]. Black Cumin and Garlic together work together to lower high cholesterol [R]. The combination of Black Cumin oil and PYR (Pyrimethamine) both fight parasites (toxoplasmosis) [R].

Dosage

I use the oil and I recommend 1 tsp (5ml) 2X daily for a 150-pound person.

A typical dose of the oil is 2.5 – 5 ml 2X daily.

As crushed or powdered seeds, the dosage is typically about 1 g per day.

The active ingredient, thymoquinone, given to advanced cancer patients was tolerated up to 2.6 g/day. The essential oil can contain up to 30% of thymoquinone [R, R].

Is black seed oil safe?

It's possible that black seed oil can increase the effects of medicines that the body processes through the cytochrome P450 pathway. Enzymes in this pathway metabolize 90 percent of common medications. Examples of common medications can include beta-blockers such as metoprolol (Lopressor) and the blood thinner warfarin (Coumadin).

If you take any prescription medications regularly, talk to your doctor before starting to take black seed oil. You shouldn't stop taking any of your regular medications without talking to your doctor first.

Black seed oil can be helpful to liver function, but taking too much black seed oil can also be harmful to your liver and kidneys. If you have problems with either of these organs, talk to your doctor to determine a safe dose (if any). Also, topical black seed oil can cause allergic reactions. Do a patch test before applying it to a large area on your skin.

Laugh Out Loud

Mathematician asks :

How to write 4 in between a 5?

China man replied: Is this a Joke?

Japan man exclaimed: Impossible!

American man said: The question's wrong!!

British man snorted: Rubbish !!

Indian man wrote: F(IV)E

This is the reason you find Indians everywhere in the world in finance, business, medicine, engineering & arts.

****

Things I learned in Organic Chemistry

• Interesting Reactions • Deadly compounds

• Nomenclature• How to draw hexagons

****

A physicist, a biologist, and a chemist were going to the ocean for the first time. The physicist saw the ocean and was fascinated by the waves. He said he wanted to do some research on the fluid dynamics of the waves and walked into the ocean. Obviously he was drowned and never returned.

The biologist said he wanted to do research on the flora and fauna inside the ocean and walked inside the ocean. He, too, never returned.

The chemist waited for a long time and afterwards, wrote the observation, “The physicist and the biologist are soluble in ocean water.”

****

What do you call someone who steals energy?

A Joule Thief!

****

A biologist, an engineer, and a mathematician were observing an empty building. They noted two people entering the building and sometime later observed three coming out.

The biologist remarked, “Oh, they must have reproduced.”

The engineer said, “Our initial count must have been incorrect.”

The mathematician stated, “Now if one more person goes into the building, it will be completely empty.”

****

Why are chemists great for solving problems?

They have all the solutions!

****

A climatologist and a greenhouse denier walk into a bar.

They sit at a table and the greenhouse denier asks the bartender for two martinis. When the bartender brings them on the greenhouse denier asks, "Thanks.

How much are these?"

"$ 2 each," said the bartender.

The greenhouse denier gives the bartender $50. When the bartender goes to the cash register, the greenhouse denier leaves the bar. When the bartender comes back to the table he asks,

"Where is your friend? I have money for him."

The climatologist answers, "That's OK... He wasn't expecting any change."

****

Don't drink water while studying .....

Chemistry states that concentration

decreases upon adding water

****

Optimist - The glass is half full !

Pessimist - The glass is half empty !

Chemist - The Glass contains

50% $H_2O(l)$, 39% $N_2(g)$, 10.5% $O_2(g)$, .44% Ar(g), .06% $CO_2(g)$

****

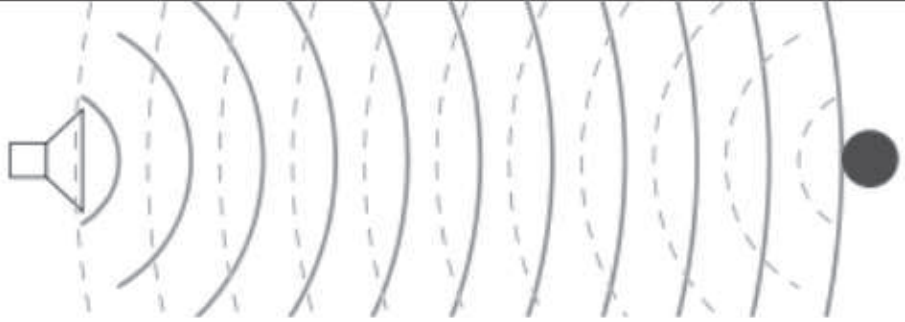
Theory is when you know everything but nothing works.

Practice is when everything works but no one knows why.

In our lab, theory and pratice are combined :

nothing works and no one knows why.

****



Member's PAGE

Ultrasonic Technology Solutions in the field of Oil & Allied Industries

Ultrasonic is the science of sound waves above the limit of human audibility, which is approximately 20 Kilohertz (KHZ) or 20,000 cycles per second.

These kinds of rapidly vibrating sound waves transfer energy in the field and create violent vibrations. These sound waves also form cavitation bubbles as the low pressure part of the wave passes through the liquid. After the wave passes, the bubbles collapses causing a sudden contracting of the fluid.

Cavitation is a process in which mechanical activation destroys the attraction forces between the molecules in the liquid phase. When Ultrasonic is propagated it interact with the particular material to reveal Nanoparticles in a material (one Nanoparticle is equal to one upon ten to the power nine of a meter).

Such a high energy action in the liquid phase can considerably increases the reactivity of the reactant and shorten the reaction time without involving elevated temperature.

Degumming and Neutralisation of Oils:

There is a potential application of Ultrasonic treatment in processing crude oil. Applying Ultrasonic technology to make the phospholipids more hydratable so that they can be removed without the need of up stream acid treatment of the oil. This will result in substantial cost saving(elimination of total acid cost and part of the caustic) and also result in lower oil losses in the soap stock.

The neutralised oil contains less soap which will make further refining more cost effective.

The revolutionary process is commercially proven and offers a quick return on its investment. New or existing refining plants can incorporate this technology.

By incorporating ultrasonic technology in line at an existing oil refinery facility, can improve oil yield, reduction in wash water, reduction in the consumption of phosphoric acid and caustic soda, and can even allow saving in steam, maintenance, spare parts and labor costs.

Repair parts and maintenance costs can be reduced in refineries that presently use out dated high shear mixtures and acid reactors to mix the acid in the oil and provide retention. In such cases, the shear mixer and tank agitator are taken out of the service. The technology reduces equipment and installation costs and above mentioned chemical savings. Ultrasonic results in excellent separation of heavy aqueous phase and high phase in a down stream centrifuge followed by an increase in the yield.

Ultrasonic technology can also be applied to other edible oil processing steps including water Degumming, bleaching and deodorisation. Oil pigments and target colour compounds are removed from oil during bleaching step using adsorbents. Superior mixing and capacity of ultrasonic device are expected to substantially cut the cost and facilities for oil bleaching.

Hydrogenation of Edible oils:

In conventional processes of hydrogenation of the edible oil following conditions are maintained

- Reaction temperature of 140-200 degree centigrade
- Hydrogen pressure max. 0.5 MPA(72.519pounds/sq in)
- Ni catalyst consumption is also on higher side
- Formation of higher percentage of trans-isomer

Temperature is the most important factor in trans-isomer control control. Lowering the temperature below 140 degree centigrade for hydrogenation is possible with the help of ultrasonic device and also to get lower catalyst consumption as well as time cycle for hydrogenation.

Application in the field Bakery, Shortening and Margarine:

Premium processes range of specialty fats used to provide bakery products with their texture and taste by imparting tenderness, richness and flakiness,

The premium quality bakery fats which are able to release flavours slowly and imparting creamy sensation have developed for various applications including cake and bread, croissants puff pastry etc.

Shortening:

Premium shortening are specially textured with low specific weight to impart good plasticity of doughs.

Shorting passes desirable characteristics such as pleasant flavour higher degree of plasticity and prolonged storage life.

Margarine Emulsification:

The main processing step of Margarine production is emulsification of water and hydrogenated oils/ fats such as corn oil, soya oil, peanut oil, sunflower oil and Rice bran oil etc.Due to high concentration of water, it is very important to apply high shear forces to creat an uniform fine size emulsion. Ultrasonic emulsification is a fast and efficient technique for formulating stable nano emulsion with very small droplets diameters and low polydispercity. Ultrasonic emulsions are often more stable than these produced conventionally.

Solvent extraction:

Ultrasonic technology also applicable in the field of Solvent extraction. In order to extract it the cell membrane must be distracted. Cell disruption is a sensitive process because at the cell walls capability to withstand high isometric pressure inside. Good control of the cell disruption is required to avoid an unhindered release of all intracellular products including cell debris and nuclei acid or product denaturation. Ultrsonication serves as well controlled means of cell disintegration.For this mechanical effects ultrasound provide faster and more complete penetration of solvent in to the cellular material and improve mass transfer. Ultrasound achieves greater penetration of solvent to the plant tissue and improve mass transfer. Ultrasonic waves generating cavitation, disrupt of cell walls & facilitates the release.

Ultrasonic technology has the potential to become a World leader in the development of new cutting edge technologies for vegetable and Allied industries.

H. C. Goel

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