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Coconut oil Nutritional facts & its non food applications

Health Tips

Mustard Oil and Ayurveda

Trade News

Sandalwood Oil

Oil Technologists' Association of India (North Zone)

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Editor's desk

Quality assurance, quality control and compliance has emerged as one the major instrument in today's regulatory ecosystem of lipid industries. In order to attain the required expertise and competence in product development and production processes, more and more manufacturing units engaged in lipid related activities are adopting international quality standard and processes.

Compliance not only helps in removing and easing out need of third party inspection and audit but also assure uniform and upgraded level of quality of product and services both. Compliance helps the organization in identifying inefficient, low value processes systems and help in increasing the process performance and effectiveness. It also help the organization to identify new opportunities and ensure larger growth both in term of quality of product manufactured and volume of business activities.

Adherence to compliance is emerging is a key prerequisite to enter international trade and evolved as profit centre from financial liability.

In the present scenario Indian lipid industries has a fair opportunities to launch their product in global market, provided their product comply with international norms and standards. This is welcome sign that more and more national and global players are adhering compliance in order to remain competitive and relevant. The automation and unified digital processes are helping businesses never before in easing out barriers between dimensional modalities and technical convergence. In changed scenario compliance is a well revered and acceptable word instead of taboo, as it used to be.

Yours truly
C S Joshi
Editor

Oil Technologists' Association of India
(North Zone)

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COCONUT OIL
NUTRITIONAL FACTS & ITS NON FOOD APPLICATIONS

DR. SUDESH K. HANDOO
BUNGE INDIA Pvt. Ltd.
RAJPURA (Pb,)

Introduction:

Coconut (Cocos Lucifer L) grown in about 93 countries in an area of 11.8 million ha produces 10.9 million of copra equivalent. Coconut provides food, drink, medicine, health, shelter, aesthetics and wealth. Since every part of coconut is used for mankind, it is known as Tree of life & Tree of heaven. One of the primary natural product produced from the dry fruit (copra) of coconut is coconut oil which has been used from time immemorial as food, food ingredient and functional foods, besides used in pharmaceuticals, nutriceuticals, cosmetics and industrial uses including bio fuel. It is known as Miracle oil.

Coconut is consumed in many forms – raw (flesh), milk, water and oil. Coconut is a simple dry nut formed of a number of layers. The outermost is the brown husk, formed of fibers called coir, while the second one is endocarp i.e an inner stone. Upon removing the endocarp the white and fleshy edible part is obtained inside which is coconut water. Given below is the nutritional value of coconut.

Nutritional value of coconut:

The amount of nutrients in 100 gm. Coconut meal is given below:

Carbohydrates	5.23 gm.
Sugars	.23 gm.
Dietary fiber	9.0 gm.
Saturated fat	29.70 gm.
Monounsaturated fat	1.43 gm.
Polyunsaturated fat	0.37 gm.
Protein	3.30 gm.
Thiamin (Vitamin B1)	0.066 mg.
Riboflavin (Vitamin B2)	0.02 mg.
Niacin (Vitamin B3)	0.54 mg.
Pantothenic acid (Vitamin B5)	0.300 mg.
Vitamin B6	0.054 mg
Folate (Vitamin B9)	0.26ug.
Vitamin C	3.30 mg.
Calcium	14.0 mg.
Iron	2.43 mg.
Magnesium	32 mg.
Phosphorous	113 mg.
Potassium	356 mg.
Zinc	1.1 mg.
Energy	350 Kcal

Nature of coconut oil:

Coconut oil is a colourless to pale brownish yellow oil with a melting point ranging from 23^0 to 26^0C. Almost 70% of saturated fatty acids present in coconut oil exhibit dietary properties which are specific to the group of short and medium chain fatty acids. Coconut oil rich in fatty acids of 12 carbon atoms or less is classified as medium Chain fatty Acids (MCFA). Coconut triglycerides are characterized by high laurate in the beta position. Coconut oil is more or less constant in composition irrespective of the country of origin.

Coconut oil is an important component in imitation dairy products like filled cheese, coffee whiteners, milk shake, ice cream, desert topping, spray oil for crackers, cookies.

Historical Facts :

Prior to World war II coconut oil was the most preferred vegetable oil for human consumption because it was considered as the healthy oil. During World war II, the Japanese military occupied the Phillippines and other South pacific islands which were the main source of Coconut oil. The supply of Coconut was effectively cut off from the United States. Although coconut oil had been popular both as a cooking oil and ingredient in numerous food products, the occupation continued to interrupt the supply for several long years as the war slowly dragged on.

Manufacturers began to develop alternative source of cooking oils, and the polyunsaturated oils phase was born. By the time the war was over, there was a lot of money at stake in the promotion of these polyunsaturated vegetable oils.

By the end of 1950,s public opinion had turned totally against saturated fats like butter and coconut oil. Saturated fats were blamed for raising cholesterol and cholesterol was now viewed as the evil enemy, the culprit responsible for the steep rise in heart disease. Butter, eggs and coconut oils were out. The new vegetable oils were in and viewed as heart healthy. Coconut oil continued to be demonized by the vegetable oil industry throught the ensuing decades. The soybean oil industry began to condemn the use of tropical oils particularly coconut oil. Unfortunately, the tropical oil industry centered in poorer nations like the Philippines & Indonesia could not afford to counter the negative propaganda of soya oil industry & science and good

health took a back seat to profits.

The Hidden truth About Coconut oil

The truth about coconut oil is obvious to anyone who has studied the health of those who live in traditional tropical cultures where coconut has been a nutritious diet staple for thousands of years.

It is time to dispel such information and unfold the truth and play fair to coconut oil. Coconut oil provides more health benefits than anyone can imagine. Check out the people of traditional cultures , such as the South pacific islands, Asia, Africa and the central America where coconut and palm oils are plentiful. For many generations, they add significant amounts of coconut oil in their traditional coconut based diets but suffer very much lower rates of obesity and health problems than those in North America and Europe who don't eat coconut based food at all.

How Coconut Oil benefits Your health

The health benefits of coconut oil include hair care, skin care, stress relief, maintaining cholesterol levels, supporting the proper functioning of thyroid gland, weight loss, increased immunity, proper digestion and metabolism, relief from kidney problems, heart diseases, high blood pressure, diabetes, dental care and bone strength. These benefits of coconut oil can be attributed to the presence of lauric acid, capric and caprylic acid and its properties such as antimicrobial, antioxidant, antifungal, antibacterial, soothing etc.

For thousands of years both Ayurvedic and Indian folkloric medicine use coconut oil as a traditional remedy for almost all illnesses. Gradually, modern medical science discovers that coconut oil can actually has all the benefits mentioned above. Coconut oil continues to show off its awesome health benefits and astonish doctors by its powerful ability to kill viruses (e.g. influenza, hepatitis C, herpes, measles), bacteria (e.g. pneumonia, urinary tract infection), fungi and yeast which are otherwise resistant to drugs and antibiotics. Studies conducted in the Philippines recently showed that coconut oil does indeed reduce the viral load in AIDS patients.

Coconut Oil In Traditional medicine

People from many diverse cultures, languages, religions and races scattered around the globe have revered the coconut as a valuable source of both food and medicine. Wherever the coconut palm grows the people have learned of its importance as an effective medicine. For thousands of years coconut products have held a respected and valuable place in local folk medicine.

In traditional medicine around the world coconut is used to treat a wide variety of health problems including the following: abscesses, asthma, baldness, bronchitis, bruises, burns, colds, constipation, cough, dropsy, dysentery, earache, jaundice, kidney stones, nausea, malnutrition, rash, scabies, sore throat, skin infections, swelling, syphilis, toothache, tuberculosis, tumours, typhoid, ulcers, upset stomach, weakness and wounds.

Coconut In Modern Medicine

Modern medical science is now confirming the use of coconut in treating many of the above conditions. Published studies in medical journals show that coconut in one form or another may provide a wide range of health benefits. Some of these are summarized below:

- Kills viruses that cause influenza, herpes, measles, hepatitis C, SARS, AIDS and other illnesses.
- Kills bacteria that cause ulcers, throat infections, urinary tract infections, gum disease and cavities, pneumonia and gonorrhoea etc.
- Kills fungi and yeast that cause candidiasis, ringworm, diaper rash and other infections.
- Expels or kills tapeworms, lice, giardia and other parasites.
- Provides a nutritional source of quick energy.
- Boosts energy and endurance, enhancing physical and athletic performance.
- Improves digestion and absorption of other nutrients including vitamins, minerals and amino acids.
- Improves insulin secretion and utilization of blood glucose.
- Relieves stress on pancreas and enzyme systems of the body.
- Reduces symptoms associated with pancreatitis.
- Helps relieve symptoms and reduce health risks associated with diabetes.
- Reduces problems associated with malabsorption syndrome and cystic fibrosis.
- Improves calcium and magnesium absorption and supports the development of strong bones and teeth.
- Helps protect against osteroporosis.
- Helps relieve symptoms associated with gall blader disease.
- Improves digestion and bowl functions
- Reduces inflammation.
- Supports tissue healing and repairs.
- Relieves pain and irritation caused by hemorrhoids.
- Supports and aids immune system functions.

- Is heart healthy, improves cholesterol ratio reducing risk of heart disease
- Protects arteries from injury that cause atherosclerosis.
- Helps prevent tooth decay
- Functions as a protective antioxidant. Does not deplete the body's antioxidant reserves like other oils do.
- Helps to protect the body from harmful free redicals that promote premature aging and degenerative disease.
- Improves utilization of essential fatty acids and protects them from oxidation.
- Relieves symptoms associated with benign prostatic hyperplasia (prostate enlargement).
- Reduces epileptic seizures.
- Helps protect against kidney disease and bladder infections. Dissolves kidney stones.
- Helps prevent liver disease.
- Supports thyroid functions.
- Promotes loss of excess weight by increasing metabolic rate.
- Is utilized by the body to produce energy in preference to being stored as body fat.
- Helps prevent obesity and overweight problems.
- Applied topically helps to form a chemical barrier on the skin to ward off infection.
- Supports the natural chemical balance of the skin.
- Softens skin and helps relieve dryness & flaking.
- Prevents wrinkles, sagging skin and age spots.
- Promotes healthy looking hair and complexion.
- Provides protection from damaging effects of ultraviolet radiation from the sun.
- Helps control dandruff.
- Does not form harmful by-products when heated to normal cooking temperature like other vegetable oils do.
- Has no harmful or discomforting side effects.

Coconut Oil As excellent frying medium:

Polyunsaturated fats which include common vegetable oils such as corn, Soya, Sunflower, safflower are not ideal for deep frying. These oils contain Omega-6 fatty acids which are highly susceptible to heat damage.

Frying destroys the antioxidants in oils and as such oxidizes the oils and causes cross-linking, cyclization, double-bond shifts, fragmentation and polymerization of oils that cause adverse health effects.

Coconut oil on the other hand is stable enough to resist heat-induced damage, while it also helps you promote heart health, maintain normal cholesterol levels and even helps you lose weight.

Coconut oil as richest source of medium chain fatty acids (MCFAs)

Coconut oil has been described as the healthiest oil on earth. That's quite a remarkable statement. What makes coconut oil so good? What makes it different from all other oils, especially other saturated fats?

The difference is in the fat molecule. All fats and oils are composed of molecules called fatty acids. There are two methods of classifying fatty acids. The first is saturated, mono-unsaturated and poly-unsaturated fats. Another system of classification is based on molecular size or length of the carbon chain within each fatty acid. Fatty acids consist of long chain of carbon atoms with hydrogen atoms attached. In this system there are short chain fatty acids(SCFA), medium chain fatty acids (MCFA), and long chain fatty acids (LCFA). Coconut oil is composed predominately of medium chain fatty acids (MCFA), also known as medium chain triglycerides (MCT).

The vast majority of fats in our diet whether they are saturated or unsaturated are composed of long chain fatty acids (LCFA).

The size of the fatty acid is extremely important. Why? Because our bodies respond to and metabolize each fatty acid differently depending on its size. So the physiological effects of MCFA in coconut oil are distinctly different depending on its size. So the physiological effects of MCFA in coconut oil are distinctly different from those of LCFA more commonly found in our foods. The saturated fatty acids in coconut oil are predominately medium chain fatty acids. Both the saturated and unsaturated fat found in meat, milk, eggs and plants (including most vegetable oils) are composed of LCFA.

MCFA are very different from LCFA. They do not have a negative effect on cholesterol and help to protect against heart disease. It is primarily due to the MCFA in coconut oil that makes it so special and so beneficial. There are only a very few good dietary sources of MCFA. By far the best sources are from coconut and palm kernel oils.

MCFAs are smaller. They permeate cell membranes easily, and do not require lipoprotein or special enzymes to be utilized effectively by our body.

MCFAs are easily digested, thus putting less strain on digestive system. This is especially important for those with digestive or metabolic concerns.

MCFAs are sent directly to liver, where they are immediately converted into energy rather than being stored as fat.

MCFAs in coconut oil can actually help stimulate body's metabolism, leading to weight loss.

Besides weight loss, there are other advantages to boosting metabolic rate. The healing process accelerates. Cell regeneration increases to replace old cells, and your immune system functions better overall.

Coconut Oil's Natural "Miracle" Ingredient: Lauric acid

Lauric acid is a medium chain fatty acid which is abundant in coconut oil and considered responsible for many of its health benefits. Coconut oil is about 50% lauric acid. The only other abundant source in nature is palm kernel oil & breast milk. The medium chain fats found in coconut oil are similar to fats in mothers milk and have similar nutriceutical effects.

The breast milk is jam packed with nutrients and disease fighting ingredients that keep the babies healthy. Incredibly, coconut oil contains one of the same components-lauric acid – found in mothers milk. The lauric acid in both breast milk and coconut oil transforms when consumed into a substance called monolaurin, the actual compound responsible for helping to strengthen the immune system. A great volume of research has been done establishing the ability of lauric acid to enhance immunity. What researchers found was that this medium chain fatty acid derivative actually disrupts the lipid (or fatty) membranes of the offending organisms.

Non Food Applications of Coconut oil:

Coconut oil is gaining recognition as an excellent health food but its benefits don't stop there. Coconut oil finds many industrial applications which include:

Coconut oil in Cosmetic industry : Coconut oil has a creamy texture & is used in the cosmetic industry. Whether applied topically or internally, coconut oil helps to keep skin young, healthy and free of disease. Virgin coconut oil is used to make natural soaps and other health products and is said to promote luxurioud hair growth and protect the skin from bacterial and viral infection. In Ayurvedic medicine, coconut oil is said to nourish the body and increases strength while application of coconut oil to the skin is said to help fixation of Vitamin D in the body. The cosmetic applications of coconut oil include:

Hair & Skin oil:

Coconut oil mixed with herbal oils and different scents is used as hair oil and is preferred because of its low viscosity. Without chemical modification, it promotes emolliency, gloss lubricity and adhesion and is said to prevent dandruff. Different preparations of coconut oil are also used to protect the skin from bacterial, protozoal and other infections in body and baby oils.

In Natural Shampoo :

Coconut oil is used to prepare natural shampoos, in which the extra of amla fruit and soap nut powder are sometimes incorporated to add value.

Herbal / medicinal oils :

Coconut oil with various herbs/medicinal plants is used for preparing medicated oils such as skin and massage oils. Some people use coconut oil with lime for healing wounds.

Scent making:

Caproic acid, capric acid and caprylic acid obtained from coconut oil are mixed with methyl alcohol, ethyl alcohol, isopropyl alcohol and their esters and utilized in scents as well as food products.

Beauty care products:

Coconut oil has a high level of myristic acid which, in combination with isopropyl myristate is used in many beauty products as an additive.

Coconut For Clean Air

Coconut oil is gaining recognition as an excellent health food and medicine, but its benefits don't stop there. It can also be used to improve air quality by reducing air pollution caused by automobile exhaust by using it as diesel fuel or as a siesel fuel alternative.

Vegetable oils are currently being used as bio diesel additives in many countries to enhance engine performance and efficiency, but coco bio diesel is superior to them all. This is due to the medium chain saturated fatty in coconut oil, which gives the fuel unique characteristics not found with other bio diesel additives.

Diesel fuel blended with just 1% coco bio diesel reduces emissions significantly. Studies conducted in Japan and Korea show that emissions of particulate matter is reduced by as much as 60% and nitrogen oxide by 20% and smoke is reduced by 70% with the addition of only 1% coco bio diesel. Addition of 2% coco bio diesel loweres ollution even more with smoke emission decreasing by an incredible 90%.

Not only does Coco bio diesel burn cleaner but it increases the efficiency of the fuel, increasing mileage, reducing wear on the engine and extending engine life. Coco bio diesel increases lubricity of the fuel by 36% thus reducing wear and tear on the engine. It increases solvency of the fuel which dissolves carbon deposits in the combustion chamber and declogs fuel nozzles, lines and ports allowing for greater engine efficiency. It also enhances cold starting efficiency of diesel fuel.

Solar power utilised to produce hydrogen fuel

Scientists from the University of Cambridge have developed an easy, less energy intensive method to generate hydrogen fuel from biomass using solar power.

Researchers are investigating how to maximise the efficiency of renewable fuels, such as solar, wind and biomass. However, gasification of biomass to hydrogen fuel requires temperatures above 700°C, with controlled amounts of oxygen or steam.

Dr David Wakerley, from the Department of Chemistry, said: “There’s a lot of chemical energy stored in raw biomass, but it’s unrefined, so you can’t expect it to work in complicated machinery. Our system is able to convert the long, messy structures that make up biomass into hydrogen gas, which is much more useful. We have specifically designed a combination of catalyst and solution that allows this transformation to occur using sunlight as a source of energy.”

Biomass is mainly comprised of lignocellulose, a rigid structure consisting of crystalline cellulose fibers interwoven with lignin and hemicellulose, meaning it is particularly hard to break down. The scientists’ new method adds catalytic nanoparticles to biomass submerged in alkaline water. When exposed to light, the nanoparticles absorb energy and react, converting biomass into hydrogen and other organic chemicals.

This technology was developed in the Christian Doppler Laboratory for Sustainable SynGas Chemistry at Cambridge. Head of the laboratory, Dr Erwin Reisner, said: “We see our sunlight-powered technology as a new and viable alternative to high temperature gasification and other renewable means of hydrogen production.”

The researchers’ next steps are scaling up the technology and they have already taken out a UK patent on it. The paper was published in Nature.

Courtesy: Laboratory News

Millennials are turning away from soap bars: Sales plunge as young people opt for more 'hygienic' hand wash

A fear of germs may be dooming the humble bar of soap as young, hygiene obsessed members of millennials turn to hand wash instead.

New figures have revealed that young people aged between 18 and 24 are choosing liquid soap over the old fashioned bars.

Sales of soap bars in the US fell by 2.2 per cent between 2014 and 2015 even though the overall market for bath and shower products increased by 2.7 per cent, Mintel has found.

Most of this decline in the use of soap bars has been driven by younger consumers and women.

But it appears traditional bars of soap are still popular with older members of society, particularly men who are over the age of 60, perhaps adding to its old fashioned image.

The figures fit within a growing trend that shows consumers are turning their back on traditional soap bars – since 2010 the number of households using bar soap has dropped by five per cent.

While some of this may be partly driven by the growing range of soap products now available, Mintel found that nearly half of all US consumers believe soap bars are covered in germs after use.

This was most strong in those aged between 18 and 24-years-old – the cohort often identified as Generation Z, or more widely as millennials.

However, recent studies have suggested there is little basis for this belief.

For example, research conducted by scientists in South Korea last year found that expensive antibacterial hand wash was no more effective at killing bacteria than normal soap and water.

Margie Nanninga, beauty analyst at Mintel, said: 'The market for bar soap is being impacted by preferences for alternate formats, including liquid body washes and liquid hand soaps.

'The market is also seeing increased pressure from the sale of in-shower moisturizers in the body care segment, which may discourage consumers from spending more on soap, bath and shower products that highlight intensive moisture.

'This can result in consumers using more basic, lower-priced bar soap options in order to splurge on in-shower moisturizers.'

The research by Mintel also highlights a shift in washing habits with 66 per cent of Americans saying they prefer taking a shower to a bath.

Liquid body wash now accounts for $2.7 billion (£2 billion) worth of sales in the US – nearly half of the soap market - perhaps reflecting this shift to showering.

Bath products like bubble bath account for just four per cent of the market.

The research by Mintel also reveals an interesting divide between men and women when it comes to soap use.

Around 53 per cent of men believe traditional soap bars can be used to wash their face, just 36 per cent of women are willing to do so.

Ms Nanninga said that bar soap manufacturers could perhaps do well to invest more in luxury products.

Overall, sales of soap, bath and shower products grew 15 percent between 2010-15.

She said: 'Strong sales of bath products are the result of increased spending for premium benefits, with consumers seeking aromatherapy in bath products and natural ingredients across all segments.

'In order to turn sluggish sales around, new bar soap product launches could incorporate a wider variety of claims, especially for more luxury and premium bar soap offerings.'

IS ANTIBACTERIAL SOAP REALLY BETTER?

Korean scientists examined the effect of triclosan, the active antiseptic ingredient most commonly used in these types of soaps.

They compared the ability of antibacterial and non-antibacterial soap to remove bacteria from human hands using 16 healthy adult volunteers.

They found it was no more effective, both experiments indicating that there is 'no significant difference' between the effects of plain soap and antibacterial soap when used under 'real life' conditions, they concluded.

Tests conducted by consumer watchdog Which? also found that rubbing your hands vigorously with soap and water for 30 seconds is as effective as antibacterial hand washes.

Courtesy: Mail online

Greenpeace protests IOI with blockade in Rotterdam

Environmental campaigners claim IOI's palm oil is tainted with deforestation, peat destruction and human rights abuses and demand the company take a tougher stance on its errant, non-compliant third-party suppliers.

Activists from environmental group Greenpeace on Tuesday blockaded Malaysian palm oil trader IOI's refinery in the harbour of Rotterdam, Netherlands, accusing the company of using palm oil linked to deforestation and human rights abuses.

Rotterdam's harbour is one of the main entry points for palm oil into Europe. Greenpeace moored its ship, Esperanza, to the dock of IOI's refinery, preventing the unloading of palm oil from incoming tankers, while eight activists — along with two Indonesian men who were adversely affected by last year's record forest fires —protested outside the facility's gates.

The protest marked the launch of a report titled A Deadly Trade-off, by Greenpeace, which said that IOI — estimated to be the world's third largest palm oil company — is failing to ensure adherence to its sustainability policy among third-party suppliers.

Activists called for IOI to: announce an immediate moratorium on forest and peatland destruction in its own operations and those of third-party suppliers; to publish a time-bound plan to vet and terminate non-compliant third-party suppliers; and publish its concession maps as well as conservation value assessments, among other demands.

They added that the only way Greenpeace would lift the blockade was for IOI to sign a statement left on its doorstep, which included public commitments to protecting forests and establishing a sustainable supply chain.

The Greenpeace blockade comes a month after the industry association that certifies environmentally and socially responsible palm oil, Roundtable on Sustainable Palm Oil (RSPO), lifted its suspension of IOI's membership.

The suspension was prompted by a complaint from non-profit consultancy Aidenvironment that IOI was clearing valuable forest and peatland in its concessions in Ketapang, West Kalimantan.

RSPO reinstated the company's membership after receiving IOI's revised Sustainable Palm Oil Policy, but green groups criticised the decision as premature and risky, and claimed that the policy did not ensure adequate oversight of third-party suppliers.

Annisa Rahmawati, forest campaigner, Greenpeace Indonesia, noted that IOI's relatively low public profile allows it to "get away with practices that could not bear public scrutiny".

"Together we will change that," she said. "IOI should know that the world is watching and that there is no market for palm oil that is so destructive to Indonesia, the habitat of endangered species, our shared climate, and the people of Southeast Asia."

The palm oil sector was blamed as one of the key culprits for last year's record forest and peat fires in Indonesia, which razed more than 2 million hectares of land, caused US$16 billion in economic losses, and affected the health, education, and livelihoods of millions.

The protest was eventually broken up by Dutch police a few hours after it started, with police using chainsaws to cut through the logs blocking the path to IOI's premises.

However, in response to the blockade, IOI chief executive officer Lee Yeow Chor acknowledged Greenpeace's report in a statement on the company's website, and said that the group accepts its responsibilities as well as Greenpeace's challenge to help achieve more sustainable outcomes for the industry.

But he noted that "monitoring these suppliers, imposing and verifying zero deforestation and no planting on peat policies, and using the threat of commercial sanction can only be done if there is an industry-wide approach to tackling these complex issues".

IOI is willing to host a gathering of palm oil firms to discuss industry solutions to sustainability challenges and invites Greenpeace and other environmental groups to participate, said Lee. The firm has already committed to take action on some of the demands made by the campaigners, and will be publishing a sustainability update soon, he shared.

Lee added: "We therefore today call for all our fellow industry players to come together and reach agreement on solutions that will lead to a truly sustainable supply of one of the world's most commonly used commodities."

However, Greenpeace's Rahmawati rejected IOI's response as "weak", and as a statement that "just passes the buck".

"Instead of cancelling contracts with suppliers in gross violation of its policies, the company continues to dodge decisive action and waits for others to make the first move," she said. "Another talking shop will not lead to fundamental reform in the palm oil industry. It's time for IOI to stop stalling and to start leading by example."

Courtesy: Eco – Business

World Olive Oil Production Slips, Brazilian Imports Sharply Lower

The latest figures from the International Olive Council predict a 7-percent drop in production and sharply lower imports by Brazil after years of growth.

According to new figures released by the International Olive Council (IOC), world olive oil production is expected to fall slightly for the new crop year to 2,918,000 tons, or 7 percent lower than the recently completed 2015/16 crop year.

Estimates put production from IOC member countries at 2,723,500 tons: 93 percent of the world total. This is an 8 percent decrease from the previous season.

Production in EU member countries will amount to 2,098,500 tons, with Spain being the biggest producer with 1,380,000 tons, only slightly less than in 2015/16 (-1 percent).

Italy's projected output of 330,000 tons represents a more significant decrease of 30 percent. Figures are also expected to be down in Greece with 260,000 tons for a 19-percent decrease, while Portugal will show a 1 percent increase to 110,000 tons.

As for IOC member countries located outside Europe, production for the 2016/17 harvest season is estimated at 625,000 tons, 3 percent less than the previous year.

While Turkey is predicted to see a larger crop with 177,000 tons (+24 percent), production will be 29 percent lower in Tunisia with a harvest of 100,000 tons. Algeria will also see a decrease of 11 percent, while in Jordan production will be down 22 percent. Figures in other IOC member countries are expected to reveal constant levels or a slight decrease compared to the previous season.

The figures were supplied to the IOC by its members, and are based on estimates only, as it's too early in the crop year to have a clear idea and the imminent harvest is subject to weather conditions. The IOC will release new data by the end of November which will provide a higher level of accuracy.

Figures released for imports of olive oil and olive pomace oil during the the first ten months of the 2015/16 season (October 2015 –July 2016), reveal increases of 10 percent in Australia, 11 percent in China, 2 percent in the

United States and 1 percent in Canada, compared with the same period the previous year.

However, some countries have been importing less olive oil during the period, with the most significant decrease in Brazil: 31 percent less than last year. Japan also recorded a decrease of 9 percent, while Russia imported 1 percent less than the previous year. Within the EU, intra-EU acquisitions have gone down by 8 percent while extra-EU imports decreased by 51 percent.

Another noted trend is increasing producer prices for extra virgin olive oil in Spain and Italy. Prices have risen recently in Spain to €3.18 per kilogram at the end of September, while in Italy, prices reached €3.92 per kilogram.

Courtesy: Olive Oil Times

Grace and Bunge sign global license agreement for trans fat-free technology to process edible oils

Grace's Trisyl 150IE custom silica will be utilised by the industry in Bunge's patented enzymatic interesterification technology to process edible oils

W.R. Grace & Co. announces the signing of a global license agreement to supply Trisyl 150IE silica to Bunge Limited, a leading global agribusiness and food company, for use in its new edible oils processing technology.

This new technology is a healthier and more efficient alternative to partial hydrogenation, a process that has been the industry standard but is being phased out by the US Food and Drug Administration (FDA) by 2018.

Based on immobilising enzymes, Bunge's new process produces no trans fats, requires fewer processing steps, occurs naturally at a lower, energy saving temperature and improves the stability of vegetable oil.

'Our novel enzymatic interesterification technology is a more efficient, sustainable and healthier alternative to traditional processing technologies, and is now available to the global edible oil industry,' said Chris Dayton, Bunge's Director of Fats and Oils Processing.

'We are pleased to partner with Grace, a global leader in silica technology, to develop Trisyl 150IE silica, which materially extends the life of the enzymes, making our process even more efficient.'

Al Beninati, President of Grace Materials Technologies and Specialty Catalysts, said: 'Trisyl silica has broad functionality. We have tailored this unique grade for Bunge's new oil processing technology, which has tremendous potential. Grace is excited about the opportunity to work with an industry leader to play an important role in this emerging, greener, healthier technology.'

Courtesy: Nutraceutical Business Review

MUSTARD OIL AND AYURVEDA

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Ayurveda i.e. "The knowledge of life" is an ancient system of medical treatment practiced in Indian subcontinent. In the western world too, Ayurvedic therapies have been incorporated in general wellness applications. "Mustard oil" despite all the controversies, is popular and extensively used in India, Bangladesh and few western countries like Rome, Greece etc. Mustard oil can be produced from about forty species of Brassica but black mustard (B.nigra), brown mustard (B.juncea) white mustard (B.hirta) and yellow mustard (B. campestris) are its chief sources.

Mustard seeds produce two types of oils 'Mustard Vegetable oil' and 'Mustard essential oil'. Mustard vegetative oil is popular edible oil of Indian subcontinent while Mustard essential oil is used for flavouring and medicinal purposes. Mustard vegetable oil (edible oil) is produced by 'cold pressing' while Mustard essential oil is produced by steam distillation of water soaked mustard seeds.

Available literature suggests that mustard was grown in the Indian subcontinent around 3000B.C. Hippocrates used mustard seeds in making of many medicines and poultices. The ancient Romans mixed grounded mustard seeds to wine for its unique flavor and remedial values. In Greece and Rome mustard was used as a condiment for fermenting fish sauce known as "garum". Mustard oil has been a part of North Indian cooking for more than 4000 years and the secret behind healthy and lustrous hair growth of Indian women.

Chemical constituents and properties of Mustard Essential oil:-

Mustard essential oil contains allylisothiocyanate (more than 90%), oleic acid, omega-6 linoleic acid, omega-3 alpha linoleic acid and erucic acid. These chemical constituents contribute to the therapeutic properties including cordial tonic, anti-rheumatic, stimulant, appetizer, antimicrobial, diphoretic, hair vitalizer, insect repellant and irritant.

Mustard essential oil & health:-

In Ayurveda the guiding principle of treatment is "Tridosha concept" according to which every individual is born with a unique fundamental constitution (prakriti) made up of three biological energies (doshas) namely vata, pitta and kapha. The dynamic balance between these three doshas determines individual's health and predominance of any one of these is the deciding factor for the individual's personality, behavior and attributes. Because of its warming properties, mustard essential oil is said to increase 'pitta dosha' and pacify 'Kapha' and 'Vata' doshas.

As hair vitalizer:-

Ayurvedic mustard oil is considered good for treating hair loss, premature graying and dull and lifeless hairs, owing to the presence of omega-6 fatty acid (linoleic acid) and other components. Warm mustard essential oil blended with sesame oil massaging gives much better results.

As mucolytic agent:-

Mustard essential oil is effective in breaking up mucous deposits and helps sinus drainage in chronic sinusitis. The antimicrobial property also helps in combating respiratory problems like bronchitis, asthma and tuberculosis (Pacifying Kapha Dosha). Massaging the chest, back and throat with blend of mustard oil with little coconut oil provides trouble free respiration removing phlegm from lungs and respiratory tract.

As Skin Vitalizer :

Being an effective antifungal, antiparasitic, antibacterial, disinfecting and antimicrobial oil mustard essential oil protects the skin from infections, wounds from getting septic and heals minor skin problems like cuts, abrasions, lacerations etc. Vitamin E content of this oil promotes healthy skin, protects the skin from harmful UV rays and effectively treats wrinkles, blemishes etc.

Other Benefits:-

The pungent aroma of the oil increases hunger by stimulating the digestive juices and thereby increases the appetite. It also promotes quicker digestion.

Massaging of blended mustard oil with coconut oil on the affected areas helps in treating rheumatism lumbago, back pain, headaches and inflammation.

Mixing one drop of this oil in a cup of warm water can serve as an exceptional gargle for protecting teeth and gums from germs.

Massaging this oil in winter keeps the body warm, trigger the functioning of muscles. This oil is also said to slow down the process of aging & helps in preventing cancer.

Mustard oil and controversies

In E.U, US and Canada 'Mustard Oil' is prohibited for edible use. They also don't recommend it for therapeutic use principally due to its "Erucic Acid" content and also for allyl isothiocyanate, as both are regarded toxic. According to USFDA erucic acid is known to cause accumulation of triglycerides in heart, myocardial lipidosis, development of fibrotic lesions of the heart, increase in risk of lung cancer and anaemia. In US these is no regulatory for the sale of mustard oil however it should carry an warning label "For external use only" Mustard essential oil is regarded safe to use as flavouring & other proposes but it is not an edible oil.

Let us now peep through the available literature about the use, toxicity and health issues linked to mustard oil.

A study conducted by ICMR reported in Annual Report of the National Institute of Nutrition, Hyderabad (1976-77) indictated that significant levels of erucic acid were detected in myocardium (.9-9%) but it could not be associated with any observed heart damage. Dr. S.C. Manchanda D.M. Cardiology AIMS says that erucic acid was found to be toxic to rats in high doses but had no harmful effects on human beings.

In 2003 food standards Australia & New Zealand on basis of researches conducted on rats and nursing pigs reported that digestibility of erucic acid containing triglycerols is near maximal (99%) whereas in rats, it is about 77%. The studies showed myocardial lipidosis and heart lesions in rats following administration of high doses of erucic acid (1500mg/kg bw/day) however there is no evidence, the dietary erucic acid can be correlated to either of these effects in humans. Food Standards Australia has set a tolerable daily intake (PTDI) for an average adult of about 500mg/day of erucic acid (There is 120 fold safety margin between this level and the associated with increased myocardial lipidosis in nursing pigs).

Xiaoming etal. have shown that erucic acid is produced by elongation of oleic acid via oleoyl Co. A and malonyl Co.A and is broken down into shorter chain fatty acids in human liver by the long chain Acyl Co.A dehydrogenase enzyme, Thus suggesting its easy palatability.

Allyl isothiocyanate (3-iso thiocyanato-1-propene) is another targeted constituent of mustard oil. Spectrophotometric analyses have shown the presence of AITC, 2.5 µg/ml in mustard and rapeseed oil, however, in radish the limit of detection was 20 µg/ml. In general mustard oil has .4% to .6% of allyl isothiocyanate. The pure allyl isothiocyanate is a colorless to pale yellow liquid, slightly soluble in water but well soluble in most organic solvents, lacrimogenic, tumorigenic at high doses, F.P. 135oF, B.P. 304oF, on decomposition emits highly toxic fumes of cyanides, oxides of sulphur and nitrogen. It is also a modulator of enzymes involved in metabolism of xenobiotics including carcinogens-!! Thus it is plausible that wide consumption of dietary AITC may have profound effects on human health…. A pure speculation indeed!!

AITC has been a subject of extensive research and some of them have been cited herewith. International Agency for Research on Cancer (IARC) have published monographs on the evaluation of the carcinogenic risk of chemicals to humans. The report says that AITC is metabolized into N-acetyl-S-(N- allyl thiocarbamoyl)-L-Cysteine and mercapturic acid in rats and humans and passes through urine. Under experimental conditions all radiolabelled AITC was cleared from urinary bladder of rats within 24 hours and in human adults in 12 hours. According to IARC, there is inadequate evidence in humans for the carcinogenicity of AITC and therefore overall evaluation- AITC is not classifiable as to its carcinogenicity to humans (Group 3). Geng F.et al. study shows a novel anticancer mechanism of a phytochemical (AITC) commonly present in human diet by arresting human bladder cancer cells in mitosis and also induces apoptosis. Wagner and colleague's study showed that AITC exhibits potent anti-inflammatory activity in cultured macrophages in vitro and a little anti-inflammatory activity in mice in vivo. Lau et al. study has shown that AITC inhibits the proliferation of human metastatic colorectal adenocarcinoma SW 620 cells in intro by inducing cell cycle arrest at G2/M phase. Kumar et al. suggested that AITC inhibits tumor growth by both antiangiogenic and proapoptotic mechanisms. Thejass and Kuttan suggest that AITC and PITC act as angiogenesis inhibitors through the down regulation of VEGF and proinflammatory cytokines. Chen et al. reported that AITC significantly decreased proliferation and viability of human brain malignant glioma GBM 8401 cells. Srivastava et al. suggested AITC retards growth of human prostate cancer xenografts in vivo.

Thus the review of literature clearly shows the benefits of mustard oil, removing doubts whatsoever. Mustard oil will continue to be most popular oil in countries like India, Pakistan, Bangladesh etc.

While US & Canada are marketing low erucic canola oil (upto 2% only) there is news to smile as IARI, New Delhi has developed a new variety of mustard- Pusa mustard-30 having erucic acid content less than 2% (compared to B.Juncea having over 45%) Bhagirath Chaudhary, founder Director of South Asia Biotech. Centre tells about the yield of this variety is 11-12 quintals/acre with

40% oil content.

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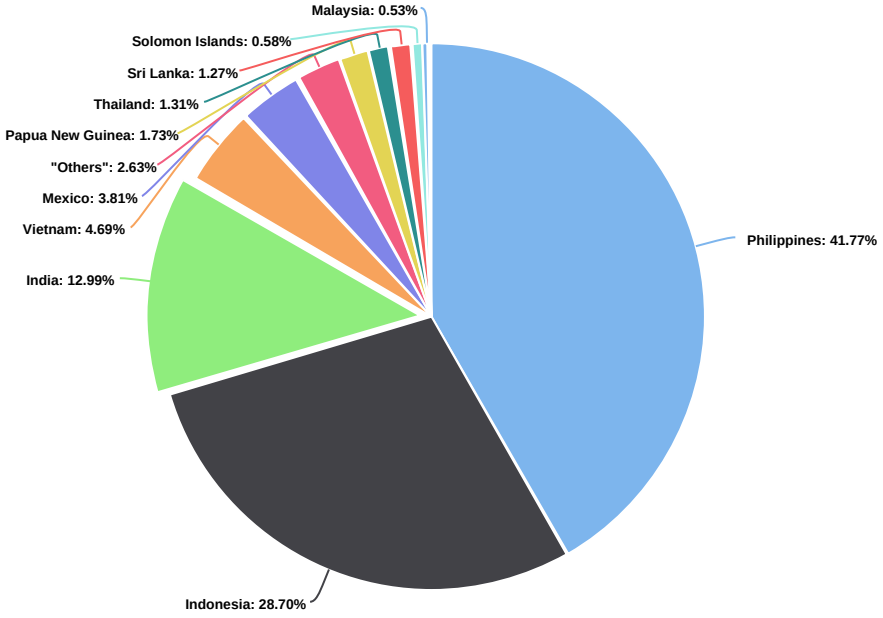
Important Figures

Oilseed, Copra. World Production `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	5,506	0.0 (0.0%)	+196 (+3.69%)	5,506	5,310	5,430
Beginning Stocks	86	-19 (-18.09%)	-16 (-15.68%)	105	102	115
Imports	66	0.0 (0.0%)	-39 (-37.14%)	66	105	99
Total Supply	5,658	-19 (-0.33%)	+141 (+2.55%)	5,677	5,517	5,644
Exports	86	+5 (+6.17%)	-22 (-20.37%)	81	108	112
Domestic Consumption	5,484	-5 (-0.09%)	+161 (+3.02%)	5,489	5,323	5,430
Food Use Dom. Cons.	-	-	-	-	-	-
Feed Waste Dom. Cons.	40	0.0 (0.0%)	0.0 (0.0%)	40	40	39
Crush	5,444	-5 (-0.09%)	+161 (+3.04%)	5,449	5,283	5,391
Total Distribution	5,658	-19 (-0.33%)	+141 (+2.55%)	5,677	5,517	5,644
Ending Stocks	88	-19 (-17.75%)	+2 (+2.32%)	107	86	102
Yield	10	0.0 (0.0%)	0.0 (0.0%)	10	10	10

Oilseed, Copra. World. Production. Main countries in 16/17MY, `000 MT



Oilseed, Copra. Country wise. `000 MT

#	Country	16/17 Oct '16	16/17 Sep '16	15/16	14/15	13/14
1	Philippines	2,300	2,300	2,100	2,232	2,276
2	Indonesia	1,580	1,580	1,590	1,600	1,580
3	India	715	715	715	710	705
4	Vietnam	258	258	254	243	231
5	Mexico	210	210	210	210	202
6	Papua New Guinea	95	95	94	95	80
7	Thailand	72	72	72	72	72
8	Sri Lanka	70	70	70	70	70
9	Solomon Islands	32	32	32	31	32
10	Cote d'Ivoire	29	29	29	29	29

Oilseed, Copra. Philippines. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	2,300	0.0 (0.0%)	+200 (+9.52%)	2,300	2,100	2,232
Beginning Stocks	22	-19 (-46.34%)	-10 (-31.25%)	41	32	39
Imports	50	0.0 (0.0%)	-40 (-44.44%)	50	90	63
Total Supply	2,372	-19 (-0.79%)	+150 (+6.75%)	2,391	2,222	2,334
Exports	-	-	-	-	-	2
Domestic Consumption	2,350	0.0 (0.0%)	+150 (+6.81%)	2,350	2,200	2,300
Crush	2,350	0.0 (0.0%)	+150 (+6.81%)	2,350	2,200	2,300
Total Distribution	2,372	-19 (-0.79%)	+150 (+6.75%)	2,391	2,222	2,334
Ending Stocks	22	-19 (-46.34%)	0.0 (0.0%)	41	22	32
Yield	1	0.0 (0.0%)	0.0 (0.0%)	1	1	1

Oilseed, Copra. Indonesia. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	1,580	0.0 (0.0%)	-10 (-0.62%)	1,580	1,590	1,600
Beginning Stocks	4	0.0 (0.0%)	-4 (-50.00%)	4	8	8
Imports	-	-	-	-	-	1
Total Supply	1,584	0.0 (0.0%)	-14 (-0.87%)	1,584	1,598	1,609
Exports	30	0.0 (0.0%)	-10 (-25.00%)	30	40	52
Domestic Consumption	1,544	0.0 (0.0%)	-10 (-0.64%)	1,544	1,554	1,549
Feed Waste Dom. Cons.	4	0.0 (0.0%)	0.0 (0.0%)	4	4	4
Crush	1,540	0.0 (0.0%)	-10 (-0.64%)	1,540	1,550	1,545
Total Distribution	1,584	0.0 (0.0%)	-14 (-0.87%)	1,584	1,598	1,609
Ending Stocks	10	0.0 (0.0%)	+6 (+150.00%)	10	4	8
Yield	-	-	-	-	-	-

Oilseed, Copra. India. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	715	0.0 (0.0%)	0.0 (0.0%)	715	715	710
Imports	-	-	-	-	-	-
Total Supply	715	0.0 (0.0%)	0.0 (0.0%)	715	715	710
Exports	5	0.0 (0.0%)	-2 (-28.57%)	5	7	2
Domestic Consumption	710	0.0 (0.0%)	+2 (+0.28%)	710	708	708
Crush	710	0.0 (0.0%)	+2 (+0.28%)	710	708	708
Total Distribution	715	0.0 (0.0%)	0.0 (0.0%)	715	715	710

Oilseed, Copra. Vietnam. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	258	0.0 (0.0%)	+4 (+1.57%)	258	254	243
Beginning Stocks	13	0.0 (0.0%)	-1 (-7.14%)	13	14	16
Imports	-	-	-	-	-	-
Total Supply	271	0.0 (0.0%)	+3 (+1.11%)	271	268	259
Exports	-	-	-	-	-	-
Domestic Consumption	260	0.0 (0.0%)	+5 (+1.96%)	260	255	245
Crush	260	0.0 (0.0%)	+5 (+1.96%)	260	255	245
Total Distribution	271	0.0 (0.0%)	+3 (+1.11%)	271	268	259
Ending Stocks	11	0.0 (0.0%)	-2 (-15.38%)	11	13	14
Yield	2	0.0 (0.0%)	0.0 (0.0%)	2	2	2

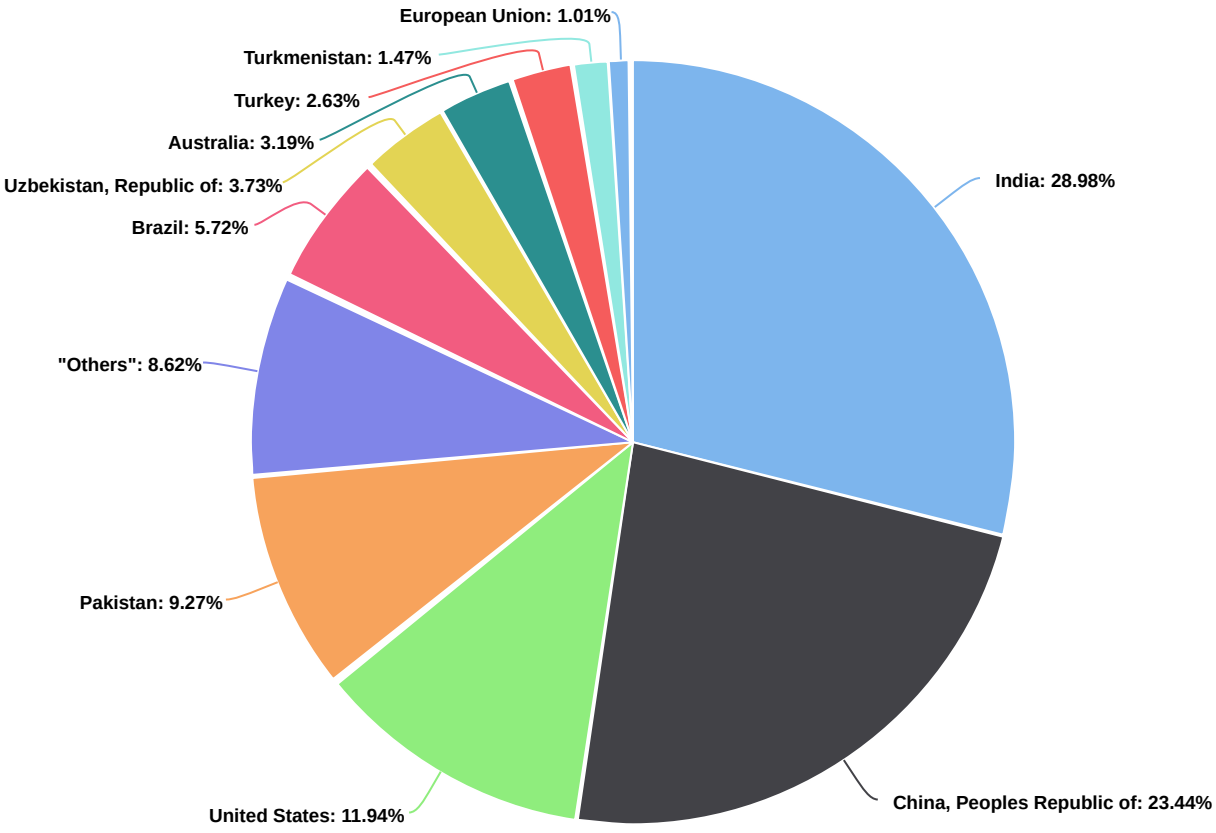
Oilseed, Copra. Mexico. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	210	0.0 (0.0%)	0.0 (0.0%)	210	210	210
Beginning Stocks	3	0.0 (0.0%)	0.0 (0.0%)	3	3	-
Imports	-	-	-	-	-	-
Total Supply	213	0.0 (0.0%)	0.0 (0.0%)	213	213	210
Domestic Consumption	210	0.0 (0.0%)	0.0 (0.0%)	210	210	207
Food Use Dom. Cons.	-	-	-	-	-	-
Crush	210	0.0 (0.0%)	0.0 (0.0%)	210	210	207
Total Distribution	213	0.0 (0.0%)	0.0 (0.0%)	213	213	210
Ending Stocks	3	0.0 (0.0%)	0.0 (0.0%)	3	3	3
Yield	2	0.0 (0.0%)	0.0 (0.0%)	2	2	2

Oilseed, Cottonseed. World. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	38,822	+128 (+0.33%)	+2,095 (+5.70%)	38,694	36,727	44,351
Beginning Stocks	887	-18 (-1.98%)	-776 (-46.66%)	905	1,663	1,762
Imports	727	+148 (+25.56%)	+139 (+23.63%)	579	588	652
Total Supply	40,436	+258 (+0.64%)	+1,458 (+3.74%)	40,178	38,978	46,765
Exports	823	+130 (+18.75%)	+274 (+49.90%)	693	549	650
Domestic Consumption	38,503	+90 (+0.23%)	+961 (+2.55%)	38,413	37,542	44,452
Food Use Dom. Cons.	-	-	-	-	-	-
Feed Waste Dom. Cons.	8,527	+38 (+0.44%)	+541 (+6.77%)	8,489	7,986	10,614
Crush	29,976	+52 (+0.17%)	+420 (+1.42%)	29,924	29,556	33,838
Total Distribution	40,436	+258 (+0.64%)	+1,458 (+3.74%)	40,178	38,978	46,765
Ending Stocks	1,110	+38 (+3.54%)	+223 (+25.14%)	1,072	887	1,663
Area Harvested	28,623	-50 (-0.17%)	-1,028 (-3.46%)	28,673	29,651	33,030
Yield	41	-1 (-2.38%)	+2 (+5.12%)	42	39	43
Seed to Lint Ratio	6,800	0.0 (0.0%)	0.0 (0.0%)	6,800	6,800	6,800

Oilseed, Cottonseed. World. Production. Main countries in 16/17MY, `000 MT



Oilseed, Cotton Seed Country wise. `000 MT

#	Country	16/17 Oct '16	16/17 Sep '16	15/16	14/15	13/14
1	India	11,250	11,250	11,208	12,525	12,950
2	China, Peoples Republic of	9,100	9,100	9,580	11,757	12,835
3	United States	4,636	4,669	3,668	4,649	3,813
4	Pakistan	3,600	3,600	3,000	4,600	4,100
5	Brazil	2,220	2,320	1,940	2,360	2,671
6	Uzbekistan, Republic of	1,450	1,450	1,490	1,528	1,607
7	Australia	1,240	1,000	804	664	1,205
8	Turkey	1,020	1,020	870	1,050	740
9	Turkmenistan	569	569	529	598	607
10	European Union	391	391	408	523	480

Oilseed, Cottonseed. India. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	11,250	0.0 (0.0%)	+42 (+0.37%)	11,250	11,208	12,525
Beginning Stocks	176	0.0 (0.0%)	-343 (-66.08%)	176	519	595
Imports	-	-	-	-	-	1
Total Supply	11,426	0.0 (0.0%)	-301 (-2.56%)	11,426	11,727	13,121
Exports	1	0.0 (0.0%)	0.0 (0.0%)	1	1	2
Domestic Consumption	11,250	0.0 (0.0%)	-300 (-2.59%)	11,250	11,550	12,600
Food Use Dom. Cons.	-	-	-	-	-	-
Feed Waste Dom. Cons.	2,650	-100 (-3.63%)	-150 (-5.35%)	2,750	2,800	3,400
Crush	8,600	+100 (+1.17%)	-150 (-1.71%)	8,500	8,750	9,200
Total Distribution	11,426	0.0 (0.0%)	-301 (-2.56%)	11,426	11,727	13,121
Ending Stocks	175	0.0 (0.0%)	-1 (-0.56%)	175	176	519
Area Harvested	10,750	-150 (-1.37%)	-1,150 (-9.66%)	10,900	11,900	12,700
Yield	1	0.0 (0.0%)	0.0 (0.0%)	1	1	1

Oilseed, Cottonseed. China, Peoples Republic of. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	9,100	0.0 (0.0%)	-480 (-5.01%)	9,100	9,580	11,757
Imports	100	+95 (+1,900.00%)	+35 (+53.84%)	5	65	5
Total Supply	9,200	+95 (+1.04%)	-445 (-4.61%)	9,105	9,645	11,762
Exports	-	-	-	-	-	-
Domestic Consumption	9,200	+95 (+1.04%)	-445 (-4.61%)	9,105	9,645	11,762
Feed Waste Dom. Cons.	1,350	+95 (+7.56%)	+105 (+8.43%)	1,255	1,245	2,162
Crush	7,850	0.0 (0.0%)	-550 (-6.54%)	7,850	8,400	9,600
Total Distribution	9,200	+95 (+1.04%)	-445 (-4.61%)	9,105	9,645	11,762
Area Harvested	2,800	0.0 (0.0%)	-250 (-8.19%)	2,800	3,050	4,400
Yield	3	0.0 (0.0%)	0.0 (0.0%)	3	3	3

Oilseed, Cottonseed. United States. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	4,636	-33 (-0.70%)	+968 (+26.39%)	4,669	3,668	4,649
Beginning Stocks	354	0.0 (0.0%)	-43 (-10.83%)	354	397	386
Imports	32	+18 (+128.57%)	+17 (+113.33%)	14	15	54
Total Supply	5,022	-15 (-0.29%)	+942 (+23.08%)	5,037	4,080	5,089
Exports	227	0.0 (0.0%)	+103 (+83.06%)	227	124	207
Domestic Consumption	4,428	-17 (-0.38%)	+826 (+22.93%)	4,445	3,602	4,485
Feed Waste Dom. Cons.	2,704	-17 (-0.62%)	+463 (+20.66%)	2,721	2,241	2,761
Crush	1,724	0.0 (0.0%)	+363 (+26.67%)	1,724	1,361	1,724
Total Distribution	5,022	-15 (-0.29%)	+942 (+23.08%)	5,037	4,080	5,089
Ending Stocks	367	+2 (+0.54%)	+13 (+3.67%)	365	354	397
Area Harvested	3,907	0.0 (0.0%)	+639 (+19.55%)	3,907	3,268	3,783
Yield	1	0.0 (0.0%)	0.0 (0.0%)	1	1	1

Oilseed, Cottonseed. Pakistan. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	3,600	0.0 (0.0%)	+600 (+20.00%)	3,600	3,000	4,600
Beginning Stocks	16	0.0 (0.0%)	-200 (-92.59%)	16	216	166
Imports	-	-	-	-	-	-
Total Supply	3,616	0.0 (0.0%)	+400 (+12.43%)	3,616	3,216	4,766
Exports	-	-	-	-	-	-
Domestic Consumption	3,500	0.0 (0.0%)	+300 (+9.37%)	3,500	3,200	4,550
Feed Waste Dom. Cons.	400	0.0 (0.0%)	0.0 (0.0%)	400	400	550
Crush	3,100	0.0 (0.0%)	+300 (+10.71%)	3,100	2,800	4,000
Total Distribution	3,616	0.0 (0.0%)	+400 (+12.43%)	3,616	3,216	4,766
Ending Stocks	116	0.0 (0.0%)	+100 (+625.00%)	116	16	216
Area Harvested	2,400	0.0 (0.0%)	-400 (-14.28%)	2,400	2,800	2,950
Yield	2	0.0 (0.0%)	+1 (+100.00%)	2	1	2
Seed to Lint Ratio	-	-	-	-	-	-

Oilseed, Cottonseed. Brazil. `000 MT

Attribute	16/17 Oct '16	Month Change	Year Change	16/17 Sep '16	15/16	14/15
Production	2,220	-100 (-4.31%)	+280 (+14.43%)	2,320	1,940	2,360
Beginning Stocks	46	+20 (+76.92%)	-10 (-17.85%)	26	56	53
Imports	-	-	-	-	-	-
Total Supply	2,266	-80 (-3.41%)	+270 (+13.52%)	2,346	1,996	2,413
Exports	110	+30 (+37.50%)	+10 (+10.00%)	80	100	92
Domestic Consumption	2,100	-110 (-4.97%)	+250 (+13.51%)	2,210	1,850	2,265
Feed Waste Dom. Cons.	150	-60 (-28.57%)	+50 (+50.00%)	210	100	165
Crush	1,950	-50 (-2.50%)	+200 (+11.42%)	2,000	1,750	2,100
Total Distribution	2,266	-80 (-3.41%)	+270 (+13.52%)	2,346	1,996	2,413
Ending Stocks	56	0.0 (0.0%)	+10 (+21.73%)	56	46	56
Area Harvested	930	-30 (-3.12%)	-25 (-2.61%)	960	955	1,020
Yield	2	0.0 (0.0%)	0.0 (0.0%)	2	2	2

Health Tips

Dietary saturated fat linked to aggressive prostate cancer

Men with prostate cancer may be more likely to have the most serious form of the disease if their diet contains a lot of fat from meat and dairy, a recent U.S. study suggests.

The increased risk tied to saturated fat and cholesterol was greater for the prostate cancer patients who had not been taking cholesterol-lowering statin drugs, researchers report in the journal Prostate Cancer and Prostatic Diseases.

The link between saturated fat in the diet and aggressive prostate cancer was also strongest for men of European descent, compared to African Aerican men, the study found.

“A diet high in saturated fat contributes to high blood cholesterol levels,” which have already been linked to worse outcomes for prostate cancer, said lead author Emma Allott of the University of North Carolina at Chapel Hill.

One out of every seven men in the U.S. will be diagnosed with prostate cancer during their lifetimes, according to the American Cancer Society.

In Western countries, prostate cancer tends to be more common, and people in Western nations also tend to consume more saturated fat, the authors note.

To explore the relationship between prostate cancer and fat in the diet, the study team used data on 1,854 men with newly-diagnosed prostate cancer, including 321, or 17 percent, with "highly aggressive" cancers.

As part of the North Carolina-Louisiana Prostate Cancer Project, the men answered questions about their diet habits, their medications, and demographic and lifestyle factors like age, race and activities.

The researchers calculated the levels of saturated fat in each man’s diet, as well as the amounts of mono- and poly-unsaturated fats, the types found in vegetable oils or fish.

They found that men with more aggressive prostate cancer consumed more calories and more cholesterol every day and had a higher percentage of calories from fat in their diets.

Among men with more aggressive prostate cancer, a greater proportion of the total fat they consumed was the saturated kind and less of it was polyunsaturated fat, compared to men with less aggressive cases.

Diets highest in saturated fat were tied to an overall 51 percent higher risk of having highly aggressive cancer, compared to diets lowest in saturated fat. Cholesterol intake was also separately tied to higher risk of more aggressive cancer, but only for white men.

For men who weren't taking statins, the risk of highly aggressive cancer was increased by 71 percent with the diets highest in saturated fat, only a 16 percent risk increase in men using statins.

“There are a number of things that men can do to reduce their risk of advanced or lethal prostate cancer,” said Stacey Kenfield, who researches lifestyle and diet factors to help prevent prostate cancer at the University of California, San Francisco.

Preventive measures include “not smoking, having a normal body weight, high physical activity, and high intake of tomatoes and dark meat fish (e.g., tuna, mackerel, salmon, sardines), and low intake of processed meat,” she said.

These efforts may also help prevent other diseases, such as heart disease and diabetes, Kenfield, who was not involved in the study, told Reuters Health by email.

People concerned about cancer “can cut down on the amount of saturated fat in their diets by choosing lean cuts of meat and low-fat dairy products, and by cooking with plant-based oils,” Allot said.

“Controlling dietary saturated fat content may be important not only for cardiovascular disease prevention and overall health, but also for aggressive prostate cancer prevention,” she said.

SOURCE: go.nature.com/2dxGMzb

Study Suggests Good Bugs are Fairly Resilient

A new study from the University of California, San Diego, and Colgate-Palmolive examines the short-term impact of skin cleansers on the skin's microbiome. The results recently were published in the Journal of Investigative Dermatology, and suggest our body's community of good bugs may be more resilient than we think.

According to the article abstract, common skin cleansers have been criticized for potentially altering the microbiome, causing detrimental effects to skin. This study therefore tested several skin cleansers to determine their short-term effects on levels of the antimicrobial peptide LL-37, as well as other bacterial DNA.

Small decreases in LL-37 levels were observed shortly after washing, although no significant change in the

bacterial community itself was detected. The researchers note additional studies are necessary to better understand the effects of chronic washing or the potential impact of skin care products.

Furthermore, a test was performed to see if washing changed the innate functional defenses of skin. This was carried out by measuring the survival of a newly introduced and potentially pathogenic bacterial species, Group A Streptococcus (GAS). Participants washed one arm with a control soap and the other with the same soap containing an antimicrobial compound; e.g., benzalkonium chloride or triclocarban. After washing and rinsing, GAS was applied.

After 30 min, a small but significant decrease in the recovery of live GAS was observed with the soap containing triclocarban. This experiment was repeated one week later, measuring GAS survival 60 min after washing. The second time around, washing with benzalkonium chloride showed a significant decrease in GAS recovery.

The authors concluded that these observations demonstrate the skin's microbial community and antimicrobial activity against GAS are relatively resilient despite the ability of some detergents to transiently alter antimicrobial peptide abundance.

In fact, antimicrobial soaps were found to increase resistance to a subsequent challenge by GAS. This increased resistance was present 30 min after triclocarban and 60 min after washing with a soap containing benzalkonium chloride.

As the authors stated, additional information is necessary to understand long-term effects but one thing's for sure: the skin's microbiome is full of surprises.

Courtesy: cosmeticsandtoiletries.com

Canola Oil Linked to Abdominal Fat Loss

Consuming canola oil as part of a healthy diet may help to reduce abdominal fat in as little as four weeks, according to health researchers.

Researchers found that after one month of adhering to diets that included canola oil, participants had 0.11 kilograms, or a quarter pound, less belly fat than they did before the diet.

They also found that the weight lost from the mid-section did not redistribute elsewhere in the body.

“As a general rule, you can't target weight loss to specific body regions,” said said Penny M. Kris-Etherton, Distinguished Professor of Nutrition, Penn State, “But monounsaturated fatty acids seem to specifically target abdominal fat.”

The dangers of abdominal fat are becoming increasingly well documented, with experts suggesting excess fat around the mid section can lead to cardiovascular disease, type 2 diabetes, high blood pressure, high blood sugar, and low HDL.

“Visceral, or abdominal, fat increases the risk for cardiovascular disease, and is also associated with increased risk for conditions such as metabolic syndrome and diabetes,” said Kris-Etherton.

“Monounsaturated fats in canola oil decrease this fat that has adverse health effects.”

The study showed that when participants consumed conventional canola oil or high-oleic acid canola oil for just four weeks, they lost abdominal fat.

The researchers tested the effect of five different vegetable oil blends in 101 participants' diets through a controlled study. The subjects were randomly assigned to follow for four weeks each of the treatment oil diets. Either conventional canola, high-oleic acid canola, high-oleic acid canola with DHA (a type of omega-3 fatty acid), corn/safflower and flax/safflower.

After each four-week diet period, participants were given a four-week break before starting the next diet period. The participants consumed two smoothies during the day, which contained the specified treatment oil. The quantity of oil was calculated based on the participant's energy needs.

All of the participants had abdominal obesity, or increased waist circumference, and were either at risk for or had metabolic syndrome, a group of conditions including obesity, type 2 diabetes, high blood pressure, high blood sugar, low HDL (also known as good cholesterol) and excess body fat around the waist.

The researchers suggest that adding canola oil to smoothies and salad dressings, as well as using it for sautéing and baking, can easily incorporate canola oil into the diet, but also point out that further studies should be conducted to look at the long-term effects of a diet high in monounsaturated fatty acids, like canola oil.

Courtesy: Nutrition Insight

Does Green Peanut Oil Stand Up to its Rising Popularity?

There is no scientific evidence for health benefits so it could be too soon to get excited about the newest miracle oil.

In the realm of edible oils, there’s a new kid on the block that “the best cooks in the South have come to think of as their local answer to extra-virgin olive oil,” reports Kim Severson, for the New York Times.

What is this new rising star? Southern green peanut oil.

Green peanut oil is not the conventional peanut oil that

currently lines supermarket shelves, the kind that's processed with high heat and chemicals. This 'healthier' oil is pressed straight from the fresh green peanuts at low temperatures, in many cases on local farms.

Severson reported on a local farmer, Clay Oliver, who presses the green peanuts he grows. What started as a small enterprise for Oliver, has fast become a culinary hit in the South and elsewhere. According to Severson, chefs are raving about the flavor and using it to enliven dishes, enhance roasted items, and generously swamp salads as if it were the 'new' extra virgin olive oil (EVOO).

Most green peanut oils are termed 'artisan oils' as they are cold pressed, unrefined, and contain no chemicals. Of course, in general terms, any oil that is cold pressed will contain more nutritional benefits than those that are heated and processed with chemicals.

But when it comes to nutrition, how does this new "extra virgin" peanut oil (EVPO) stack up against the good old trusty EVOO?

The answer is, who knows.

The description on the Oliver Farms website says it's "full of monounsaturated fats, it also has Vitamins A, D, and E." But, the actual nutrition facts for Oliver Farms Green Peanut Oil are nowhere to be found.

In fact, tracking down nutrition facts for cold pressed peanut oil is not an easy task and only results in limited information.

Olivado Extra Virgin Peanut Oil nutrition breakdown per one tablespoon is as follows: 120 calories, total fat 14 g, 10 g mono, 2 g poly, 2 g sat, 0 cholesterol. Another EVPO by Bell Plantation also has similar data.

These basic nutrition facts are very similar to EVOO per tablespoon. But that's not enough to suggest a switch is warranted, even though it may taste good in some culinary applications. As already suggested, information on EVPO is limited. And from what can be seen, there are no facts reported regarding beneficial nutrients or compounds.

In terms of scientific research, one study from 1969 did look at the fatty acid composition of cold pressed peanut oil. But this study is considered too old to take seriously since our methods of nutritional evaluations have advanced so much in recent years. And in any case, it didn't reveal anything of interest.

In terms of research-based health benefits at this stage, there are zero facts in relation to EVPO. On the other hand, EVOO has hundreds, if not thousands of scientific studies that connect it's powerful polyphenols and compounds to lowered risk of many diseases such as cancer, cardiovascular disease, neurodegenerative disorders, and the metabolic syndrome, among others. It is clear to see that EVOO is the winner when it comes to its proven value to our health.

Another thing to consider before considering EVPO is peanut allergies. Those with peanut allergies will need to avoid it, as it is considered allergenic and may result in anaphylaxis. Consuming EVOO does not result in such side effects but is considered safe and beneficial for most people.

The acclaimed great flavor of the new rising star is clearly a highlight for chefs serving up their dishes. But for the rest of us, the switch to using green peanut oil on a daily basis may be a bit premature. Especially given the amount of evidence we currently have about EVOO and its positive health benefits.

Courtesy: Olive Oil Times

Do we have it backward on giving kids low fat milk instead of whole?

Whole milk consumption linked to leanness in early childhood, Canadian study finds

Children who drank whole milk tended to be leaner than those who drank low fat or skim milk, a study by Toronto researchers has found.

The new findings, published in Wednesday's online issue of the American Journal of Clinical Nutrition, suggest a need to take a closer look at those guidelines, said study author Dr. Jonathon Maguire, a pediatrician at St. Michael's Hospital in Toronto.

"If you don't get fat from someplace, then you take energy from somewhere else, and it may be that children who are receiving reduced fat milk seek foods that are higher in caloric density, and maybe that's why they're a bit bigger," Maguire said in an interview.

'It really amazes me today in 2016 that we don't know what the right answer is and that we need to find out.'- Dr. Jonathon Maguire, pediatrician

The reverse is also possible, as parents of children who are overweight may choose to provide them with low fat milk, he added.

Childhood obesity in North America has tripled in the past 30 years. Children's consumption of whole cow's milk has halved over the same period.

Current guidelines from Health Canada and the American Academy of Pediatrics recommend two servings of low fat milk (one per cent or two per cent) milk for children over the age of two to reduce the risk of childhood obesity.

2 cups of milk enough for most kids

Maguire expects people to ask doctors and researchers for guidance on what kind of milk to give their children.

"It really amazes me today in 2016 that we don't know what the right answer is and that we need to find out."

The study's authors focused on 2,745 children, with an average age of almost three, who were recruited from primary health-care practices in the city. Heights and weights were measured and blood samples were taken to examine vitamin D levels.

The parents were surveyed on whether their child's diet was mainly skim, 1 per cent, 2 per cent or whole milk.

BMI scores

Children who drank whole (3.25 per cent fat content) milk had a Body Mass Index (BMI) score that was 0.72 units lower than those who drank 1 or 2 per cent milk.

The difference in BMI score is almost the difference in weight between an overweight and obese child, Maguire said.

Among the children in the study:

- 49 per cent drank whole milk.
- 35 per cent consumed 2 per cent milk.
- 12 per cent drank 1 per cent milk.
- 4 per cent consumed skim milk (0.1 per cent fat).

For the 122 children who consumed more than one type of milk, researchers averaged the milk fat per cent.

The researchers didn't study why consuming higher fat milk was associated with leaner children.

Vitamin D implications

Another aspect of the research focused on milk fat intake and vitamin D levels. The vitamin helps strengthen our bones and may play a role in reducing the risk of chronic diseases later in life.

The researchers found that roughly one cup of whole milk had the same effect on children's vitamin D levels as three cups of 1 per cent milk.

Since both vitamin D status and fat are important for a child's growth and development, the study's authors said the findings could have implications for maintaining health at a population level.

Childhood obesity in North America has tripled in the past 30 years. At the same time,children's consumption of whole cow's milk has halved. (iStock)

But no cause-and-effect relationships can be drawn from the data.

"The choice of milk fat content that parents choose to provide their children is really a personal choice," Maguire said.

'Not the greatest idea'

Dr. Daniel Flanders is a pediatrician in Toronto who wasn't involved in the study. He usually give parents a range of options on buying milk and suggests they choose what's convenient for the family.

"May be it's not the greatest idea to put two-year-olds on skim milk," Flanders said. "We still don't know the answer, but this another step in the direction of making our recommendations more evidence-based."

Canada's Food Guide currently recommends two servings of milk or alternatives each day for children aged two to eight.

Health Canada is currently in the process of reviewing and seeking input to update the food guide. The public consultations end Dec. 8.

Funding of the Target Kids research network was provided by the Canadian Institutes of Health Research and the St. Michael's Hospital Foundation.

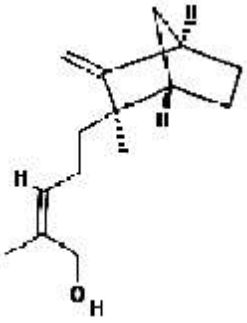
Courtesy: CBC News

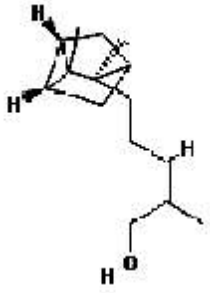
Sandalwood oil

Sandalwood oil is an essential oil obtained from the steam distillation of chips and billets cut from the heartwood of various species of sandalwood trees (e.g. Santalum album[1] and Santalum spicatum). The oil is distilled from the wood of the entire tree including stump and roots.

Main constituent:

Sandalwood oil contains more than 90% sesquiterpenic alcohols of which 50-60% is the tricyclic a-santalol. ß-Santalol comprises 20-25%.





Molecular Structure of santalol

The composition of the oil will depend on the species, region grown, age of tree and possibly the season of harvest and details of the extraction process used.

Current ISO standards for S. album oil, are 41-55 % a-santalol and 16-24 % ß–santalol .

Extraction of Sandalwood Oil

To produce sandalwood oil, billets of wood are chipped and reduced to a powder. Most sandalwood oil today is produced by steam distillation of the powder. The high boiling nature of the oil makes the process rather slow, taking many hours to complete.

In order to get the most benefit from this essential oil, the sandalwood tree must grow for at least 40-80 years before the roots can be harvested. If a tree is allowed to properly mature, the older it is, the aroma of the essential oil extracted from it will be stronger.

The yield of oil is highest in the roots and lowest in chips, which are a mixture of heartwood and sapwood. The oil content of the heartwood varies from tree to tree and is higher for older trees. Light-colored wood yields 3 to 6 percent oil, while dark brown wood yields about 2.5 percent oil. Furthermore, oil from younger trees has a slightly lower santalol content than the mature trees, which makes it ill-advised to harvest at a very young age. eHow.com14 provides a quick recipe for homemade sandalwood oil:

USES:

Sandalwood oil is used in perfumes, cosmetics, sacred unguents, and as a mild food flavoring.

Due to its highly coveted fragrance, the essential oil produced from Sandalwood is often used in aromatherapy and is added to soaps and cosmetics. It is also used in Ayurvedic medicine for the treatment of both somatic and mental disorders, including common colds, bronchitis, fever, urinary tract infections, and inflammation. A study investigating the effects of inhalation of East Indian sandalwood oil and its main compound, a-santalol, on human physiological parameters found that the compounds elevated pulse rate, skin conductance, and systolic blood pressure. There is also religious significance associated with sandalwood oil and it is used in many different religions around the world, including Hinduism, Jainism, Buddhism, and Zoroastrianism.

Sandalwood oil is used extensively for its woody-floral scent. It pairs well with other wood or floral scents such as violet, rose, tuberose, clove, and oakmoss.

But since the wood is so rare and expensive, cosmetic companies are now trying to find synthetic substitutes to try to imitate the structure and scent of sandalwood. There are several synthetic odorants with odor similar to sandalwood oil, used as lower-cost alternatives for perfumes, emollients, and skin cleaning agents. Two of these, Sandalore and Brahmanol, have been found to be agonists of the cutaneous olfactory receptor OR2AT4, with potential therapeutic benefits for wound healing. Natural sandalwood oil, and other synthetic sandalwood odorants, did not have the same effect.

The highest quality sandalwood is the Indian variety, known as Santalum album. Hawaii and Australia also produce sandalwood, but it is not considered to be of the same quality and purity as the Indian variety.

Benefits of Sandalwood Oil

The facts provides a rundown of sandalwood benefits for health and wellness. Here's a partial list:

Antiseptic

This oil is a good antiseptic agent and is safe for both internal and external application. It helps protect internal wounds and ulcers from infections; when applied to skin, it helps protect wounds, sores, boils and pimples from getting infected.

Anti-inflammatory

The essential oil and paste are effective as anti-inflammatory agents.

They have a cooling effect and help relieve all types of brain, digestive, nervous, circulatory and excretory system inflammation, which result from infections, fevers, antibiotic side effects, insect bites, wounds and poisoning.

Antispasmodic

This oil works against spasms and contractions by relaxing nerves, muscles and blood vessels.

Astringent

Although very mild, sandalwood oil can induce contractions in your gums, muscles and skin, offering benefits like better muscle strength and a tighter skin.

Deodorant

There are individuals who use sandalwood oil to relieve body odor.

Disinfectant

Its fragrance keeps microbes and small insects away, which is why it is widely used in incense sticks, sprays, fumigants and evaporators for disinfecting large areas.

Emollient

It helps soothe the skin, relieve inflammation and irritation, ease infections and promotes a fresh, cool feeling.

Expectorant

It is specifically effective in treating coughs, but it also helps fight the infections that cause the cough, cold, flu or mumps.

Memory booster

Sandalwood oil helps improve memory and stimulates concentration. It keeps your brain cool and relaxed and saves you from unnecessary stress and anxiety.

Tonic

It is soothing on your stomach and the digestive, circulatory and nervous systems, helping them function harmoniously.

Sandalwood Essential Oil Side Effects

There are no major reported side effects to the use of sandalwood. Some people may experience minor skin irritation from its use. People with severe allergies or pregnant should also be careful before trying any type of aromatherapy.

As with any essential oil, a small test patch should be applied to the skin first before using it all over. Sandalwood oil is generally not applied directly to the skin, but is usually mixed with a carrier oil or lotion first to dilute it. Common carrier oils include: almond oil, jojoba oil, or grapeseed oil.

Laugh Out Loud

● A women at a gas station noticed a spaceship landing in front of her. An alien stepped out of the spaceship and started to pump gas into it. The women noticed the letters 'U.F.O.' printed on the side of the ship. She turned to the alien and asked' Does U.F.O. stand for Unidentified Flying Object?'

The alien answered, 'No, it stands for Unleaded Fuel Only!'

● Q: Did you hear about that new broom?

A: It's sweeping the nation!

● An astronaut in space was asked by a reporter, "How do you feel?"

" How would you feel,"the astronaut replied, "if you were stuck here, on top of 20,000 parts each one supplied by the lowest bidder?"

● Q: What gets wetter the more it dries?

A: A towel.

● A mound of wolf and fox bones is piled up outside a cave. Beside it, a lion is gnawing at the bloodied leg of a bear. The moral of the story?

The accuracy of your scientific study is irrelevant if you're mates with the project manager.

A Princeton plasma physicist is at the beach when he discovers an ancient looking oil lantern sticking out of the sand. He rubs the sand off with a towel and a genie pops out. The genie offers to grant him one wish. The physicist retrieves a map of the world from his car and circles the Middle East and tells the genie, 'I wish you to bring peace in this region'.

After 10 long minutes of deliberation, the genie replies, 'Gee, there are lots of problems with Lebanon, Iraq, Israel, and all those other places. This is awfully embarrassing. I've never had to do this before, but I'm just going to have to ask you for another wish. This one is just too much for me'.

Taken aback, the physicist thinks a bit and asks, 'I wish that the Princeton tokamak would achieve scientific fusion energy break-even.'

After another deliberation the genie asks, 'Could I see that map again?'

● Q: Did you hear about the man who got cooled to absolute zero?

A: He's 0K now.

● A small piece of sodium that lived in a test tube fell in love with a Bunsen burner. " Oh Bunsen, my flame, "the sodium pined. "I melt whenever I see you, "The Bunsen burner replied, "It's just a phase you're going through."

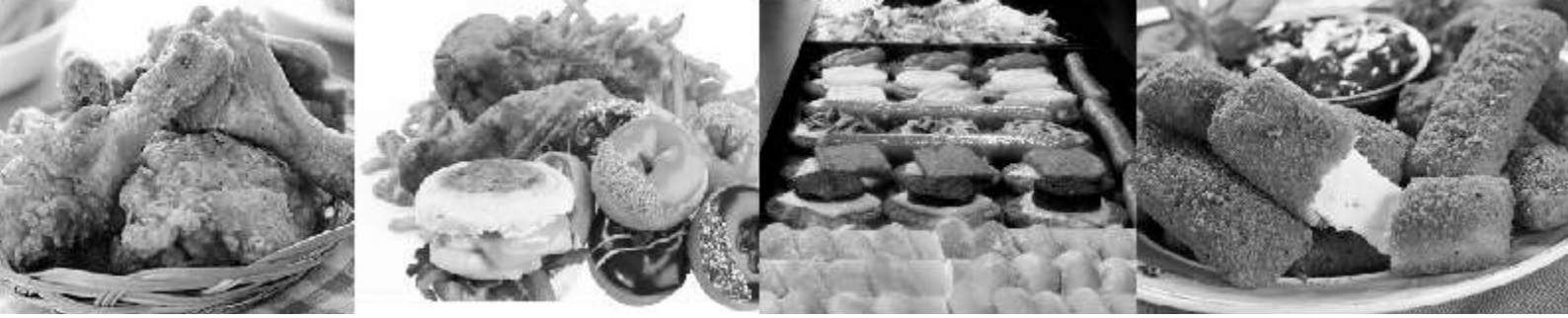
● Q: What did one titration tell the other?

A: Let's meet at the endpoint

● A priest, a doctor, and an engineer are golfing. Ahead of them is a group that is playing incredibly slow. They play through and back at the clubhouse they ask about the slow players. "Oh," says the manager. "They're a group of fire fighters who were all blinded last year saving the clubhouse. " " Oh, that's awful." says the doctor. "I'm an optometrist, so I"ll see all of them pro bono. " Why don't they just play at night?!" says the Engineer.

● I read a Book on Anti-Gravity.

I Couldn't put it Down.



Member's PAGE

FORTIFICATION IN EDIBLE OILS

For the past few years Researchers have shown a wide spread shortage of Vitamin A & D deficiencies along with Iodine, Iron and Folic Acid in Indian population especially children in the age group of 1 to 5 years, leading to Night Blindness, Goitre, Anaemia and various birth defects. The required intake of vitamins from the regular diet is emerging as big health problem and as such it becomes imperative to enrich the diet with additional doses of vitamins and minerals in Food items including vegetable Oils. These vitamins and minerals are essential for the proper growth of physical fitness and working of the immune system. Micronutrients also help in formation of Hormones and Enzymes.

Dietary diversification, micronutrients supplementation and food fortification are three important strategies that can address these deficiencies or malnutrition.

Fortification has no effect on the shelf life of the product, however, while deciding on the appropriate quantity , only those vitamins and minerals are considered which will not change the appearance,. taste, texture and flavor of the food. The concept is based on the fact that the consumer buying behavior should not be affected by the fortification process.

Similarly, Food Fortification is also important and addition of Nutrients at level higher than the found in original food is essential.

Vegetable oils , besides wheat flour is a part of our food system which provide Nutritional benefits to all human beings. The average consumption of vegetable oils in India ranges from 8-10 kg per year per person and because of changing lifestyle, easily availability and affordability are the reasons for its growth in consumption.

The major veg. oils which are part of our regular diet are :-

Soyabean , Mustard, . Palm, Sunflower, Ground Nut, Canola, and Ricebran oil.

Oil fortification is one of the efficient and effective solutions, good cost effective and a globally accepted complementary strategy to comprehensively improve the nutrition and health of all human beings. In view of this, government has made it mandatory to add Vitamin A and D in all types of vegetable oils being produced for edible purposes.

- Fortification of salt is done by the addition of Iodine and mandatory sold as IODISED SALT.
- The other fortified foods such as Biscuits, Wheat Flour, double fortified salt are also manufactured and marketed by Industry and the micronutrients normally added in foods are IRON, ZINC, IODINE CALCIUM, VITAMIN A, B group vitamins , vitamin C, D and E .

The most fortified foods and associated nutrients are:-

FOOD	NUTRIENT
SALT	IODINE, IRON
WHEAT AND MAIZE FLOURS	IRON, FOLIC ACID, ZINC, VITAMIN A & B-VITAMIN
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