FOCUS LIQUIDS

MAY 2021

SGS

INTRODUCTION

Dear Customer,

As the global market leader in agricultural commodities inspection and testing, we provide top-of-the-range testing, inspection and certification services on a daily basis.

We proudly serve our wide range of customers, from local organizations to companies heavily involved in the global supply chain, processors and consumers. Our network of over 2,600 offices, 89,000 employees and numerous laboratories allows us to provide our customers with an unrivaled level of expertise.

In recent years, global consumption of vegetable oils, animal fats and other edible liquids has seen a considerable – and consistent – growth. This is mainly due to worldwide population growth and increasing prosperity in developing countries. Increasing industrial consumption for feedstock in the biodiesel, renewables and oleochemicals market are also key drivers.

However, this rapid growth was somewhat halted in 2020 as a result of adverse weather conditions, the widespread effects of COVID-19 and a global shortage of shipping containers.

SGS SOLUTIONS FOR THE GLOBAL AGRI LIQUIDS INDUSTRY:

We provide globally:

- Bulk loading and discharge supervision
- Container and flexitank/bag loading and discharge supervision
- Sampling
- Quality and analytical testing
- Risk management

Our laboratories operate under strict guidelines and are accredited to ISO/IEC 17025.
As an analyst and superintendent member of the Federation of Oils, Seeds and Fats Associations (FOSFA) we can inspect, verify and analyze oils and fats. We are also members of PORAM, ANEC, and NOFOTA.

Additionally, we do offer our customers FOG (full outturn guarantee) service to cover any weight discrepancies between the loading and discharging of a shipment.

FOG provides a one-stop-shop to simplify end-to-end shipping operations. All shipping services are now grouped together and centralized, including full inspection services at both ends (load and discharge ports), weight cover with or without franchise and administrative/ procedural requirements.

Our wealth of experience and vast technical knowledge of quality, storage and transportation also means that we are expertly placed to offer our customers guidance and support to assist them with their training needs.

We will introduce some of our agri liquids team members in this newsletter, explaining their expertise as it relates to specific agri commodities, but please note that their scope often very wide and extends beyond these individual commodities. The commodities highlighted within this newsletter include:

- Palm oil
- Soybean oil
- Rapeseed oil
- Sunflower oil
- Coconut oil
- Olive oil
- Molasses
- Used cooking oil
- Fish oil

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PALM OIL

Palm oil is the world's most consumed oil, accounting for approximately 36% of all global vegetable oil and animal fats production. Annual palm oil production has increased from roughly 20 MMT in 2000 to 75 MMT in 2020 according to the USDA.

Indonesia and Malaysia, the world's largest and second-largest palm oil producers respectively, account for almost 85% of the total global supply. However, palm oil is also produced in 42 other countries, including Thailand, Colombia and Nigeria.

The world's largest importers, responsible for importing 58% of the global market share (roughly 28.7 MMT), are India, China, the European Union, Pakistan, Bangladesh and the United States.

Palm oil's popularity and versatility means that it can be found in a large variety of packaged products on supermarket shelves. What's more, it's also an incredibly efficient crop – requiring only 10% of the land that other crops need to grow.

A single palm tree alone is capable of producing around 40 kg of oil per year, with palm fruit containing an oil content of around 30 - 35%.

2020 saw palm oil production dip below the expected levels, at least for the first 9 months of the year, which resulted in lower stocks. However, this can partly be attributed to the effects of COVID-19, the rising price of soybean oil and a general shortage of labor.

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SOYBEAN OIL

Soybean oil is the world's second-most-consumed oil. Global production in 2020 reached around 60 MMT, accounting for roughly 25% of global vegetable oil and animal fats production according to the USDA. Brazil, the United States, Argentina and Paraguay are the world's leading soybean oil exporters.

On a global level, an increasing number of countries are choosing to produce their own soybean oil by crushing imported soybeans in local facilities. For instance, in Algeria, soybean imports have skyrocketed to more than 550,000 MT in 2019/20 (compared to a mere 150,000 MT in 2017/18).

Currently, China, the United States, Brazil, Argentina, the European Union, India, Mexico, Russia, Egypt and Paraguay are the world's foremost soybean oil producers. The soybean oil market consists of inland shipments, imports, and exports.

Soybean oil is high in polyunsaturated fatty acids (mainly C18:2 linoleic acid) which are known to have a positive effect in reducing the risk of heart diseases. Some studies also indicate that consumption of soybean oil might lower LDL (bad) cholesterol levels in the blood.

Compared to other vegetable oils, soybean oil has a relatively high smoke point of > 230°C. This makes soybean oil a good option for high-heat cooking methods such as frying as it can withstand high temperatures without breaking down. To further increase the high temperature, stability soybean oils are sometimes partially hydrogenated.

Global production relies heavily on favorable weather conditions as well as supportive governmental import and export tariff policies.

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RAPESEED OIL

At around 27 MMT rapeseed oil is the world's third most produced oil behind palm oil and soybean oil.

There has been a marked increase in consumption throughout Europe in recent years. This is largely because rapeseed oil contains few saturated fatty acids (7%) and it has a balanced profile between omega 9 (61%), omega 6 (21%), and omega 3 (11%). Therefore, it's one of the healthiest oils to consume, alongside olive oil.

Rapeseed oil, or canola oil (which was developed as a low-glucosinolates and low-erucic acid alternative) is predominantly used in the animal feed, food or biodiesel industries. Canada is the world's largest producer, followed by the European Union, India and Australia. The European Union and China are the world's largest rapeseed oil and canola oil consumers, though in China these oils are only ever used within foodstuffs.

Rapeseed oil possesses great biodiesel potential. In fact, Rudolph Diesel first tested how effective vegetable oils were at powering engines around a century ago. Due to the climate crisis, biodiesel has seen a significant resurgence in popularity in recent years, which has directly increased global demand for rapeseed oil. This trend has also increased sales of soybean oil and palm oil – though the latter has been hampered by solidification issues when used in colder climates.

While rapeseed oil and palm oil are promising biofuels, their uptake has been halted by various governmental policies. For example, in January 2020, the French government announced it would stop providing tax advantages to anyone that produces palm oil for the purposes of using it as a biofuel. What's more, French producers now also have to guarantee that biofuels were produced under conditions ensuring net-zero greenhouse gas emissions.

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SUNFLOWER OIL

Sunflower oil, with its share of just under 10% (or 19.36 MMT) of the global vegetable oil market, is primarily used in the food industry. Ukraine (responsible for 51% of global exports) and Russia (responsible for 28%) are the world's primary producers and exporters, with the European Union also accounting for a significant share of sunflower oil production.

The world's largest importers are India, the European Union, China, Iran, Iraq, Egypt, Turkey, South Africa, Uzbekistan and Chile. Interestingly, Turkey is a large importer of crude sunflower oil from Russia and Ukraine, before exporting refined sunflower oil to neighboring Syria and as well to Africa. Iraq used to import from Turkey until 2017, until a sunflower oil refinery was established in the Medhatya region.

Sunflowers are an attractive agricultural crop due to having one of the shortest growing seasons of all major vegetable oil crops. There are roughly 70 different species that are divided into two main categories: "Oil sunflower seeds" and "Edible sunflower seeds". Approximately 80% of the sunflower's value comes from the oil, meaning "Oil sunflowers seeds" (boasting 45 – 54% oil content) are more valuable than "Edible sunflower seeds" (boasting just 22 – 35% oil content).

Sunflower seed crushing is typically a low-margin, high-volume business, in which it is more common to import crude oil and to then refine it locally. Crude sunflower seed oil often contains sediments – though if the oil is handled properly during storage, loading, transportation and discharge, such impurities matter for little. However, if it is handled incorrectly, then sedimentation may cause serious operational issues, as well as significantly devaluing your stock.

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COCONUT OIL

Coconut oil – a more expensive product – is produced far less than its cheaper counterparts, with production reaching around 3.6 MMT in 2020 according to the USDA.

The Philippines is the world's largest producer, followed by Indonesia. However, due to a decline in production caused by weather conditions, oversupply of global vegetable oils and high commodity prices, coconut oil exports from the Philippines decreased significantly in 2019 and 2020.

Coconut oil can be extracted by either "dry" or "wet" processing methods. The dry process is generally favored by small-scale farmers, resulting in a higher – albeit lower-quality – yield. It involves extracting the meat from the shell before drying it using sunlight, a fire, or a kiln. This produces something known as the copra, which is then pressed or dissolved with solvents in order to produce the coconut oil itself.

The wet process, on the other hand, requires industrial equipment, energy and high operating costs – though despite the extra equipment, the yield is typically about 10-15% smaller. Another alternative method is to create virgin coconut oil, which can be produced using fresh coconut meat, milk or residue.

Coconut oil is typically used within the food and cosmetics industries. When made into soap, it results in a harder product, though it retains a higher water content than other alternatives which increases manufacturer yields. However, in the Philippines, biodiesel fuel derived from coconut oil is currently being used as an alternative fuel source to power generators, automobiles, trucks and buses.

Our Philippines office is a member of the United Coconut Association of the Philippines (UCAP).

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OLIVE OIL

It's estimated that olive oil production first began all the way back in 6,000 BC. Given its rich history, however, global olive oil production is relatively small when compared to all the other major vegetable oils – reaching around 3.2 MMT in the 2019/2020 crop year according to the USDA. Olive oil is typically used in the food and pharmaceutical industries. The world's largest producers are Spain, Morocco, Turkey, Greece and Italy. Spain alone is responsible for around half of all global production and exports roughly 46% of all that it produces.

As with other vegetable oils, olive oil is also subject to changing governmental regulations. For instance, recent US import tariffs of 25% on bottled imports of Spanish olive oil has led to two major developments:

1. Commercial agreements with US companies that they will bottle all imported oil themselves.
2. Increased exports of packaged oil to Australia and Asia (such as China and Japan).

Olive oil's taste is largely influenced by its production method. Virgin olive oils are the least affected, however, because they are produced under conditions that do not alter the oil itself in any way. What's more, they do not undergo any further treatment aside from washing, decantation, centrifugation and filtration.

Virgin olive oils that are fit for consumption as they are include: extra virgin olive oil, ordinary virgin olive oil and refined olive oil.

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MOLASSES

Molasses is a liquid by-product that is produced from refining sugarcane or sugar beets into sugar. It's mainly composed of water (22%) and sugar in the form of sucrose (75%).

In 2020, the global molasses market was estimated to be worth USD12.9 BN. The world's leading exporters of molasses are India, Indonesia, Russia, Germany and Guatemala, while the largest importers are the United States, United Kingdom, Netherlands, Belgium and South Korea.

Molasses can also be used to produce ethanol, with India currently leading the way in this specific field.

Molasses varies in quality according to seasonal and regional conditions. Mills also pay strict attention to maximizing sugar recovery during molasses production. Molasses is mainly used as an additive to animal feed or as a fermentation feedstock, though it can also be used for cooking, baking and for a variety of industrial purposes.

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USED COOKING OIL

The global market for used cooking oil (UCO) is currently estimated to be worth around USD 6 BN. Given the worldwide demand, it's expected that this will rise significantly in the near future – though recent price increases might halt this progress.

China is the world's largest exporter, with Chinese exports growing from 109,000 MT in 2016 to more than 1 MMT forecasted for 2021. SGS boasts a strong network and first-class laboratory capabilities to support our customers' UCO businesses.

Other notable exporters include Indonesia, Malaysia, Saudi Arabia and the United States.

SGS offers one-stop shop services at both the loading port and discharging port. We provide our customers with critical assistance when it comes to selecting suppliers and developing their export business. For example, we help customers achieve ISCC certification, which hugely benefits their sustainable development and overall business growth.

UCOs are waste oils and fats primarily produced by companies operating in the food processing industry, within restaurants, and by individual households themselves. UCOs are a popular feedstock for biodiesel and renewable diesel.

Most UCO is shipped via flexi-bags in containers, though bulk shipments are an increasingly attractive option – especially considering the current shortage of container vessels and the high container prices from China to the EU.

UCOs generally contain significant impurities, such as Free Fatty Acids (FFA) and moisture, which must be removed before beginning the transesterification process. The acid and saponification values determine both the quality and the price of UCO.

While the more mature restaurant's UCO collecting industry is now well-established, there's still significant growth potential when it comes to household collection of UCO. Households can be incentivized to participate by reiterating that regularly disposing of UCOs down the sink may well lead to blockages and contamination to water systems occurring further down the line.

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FISH OIL

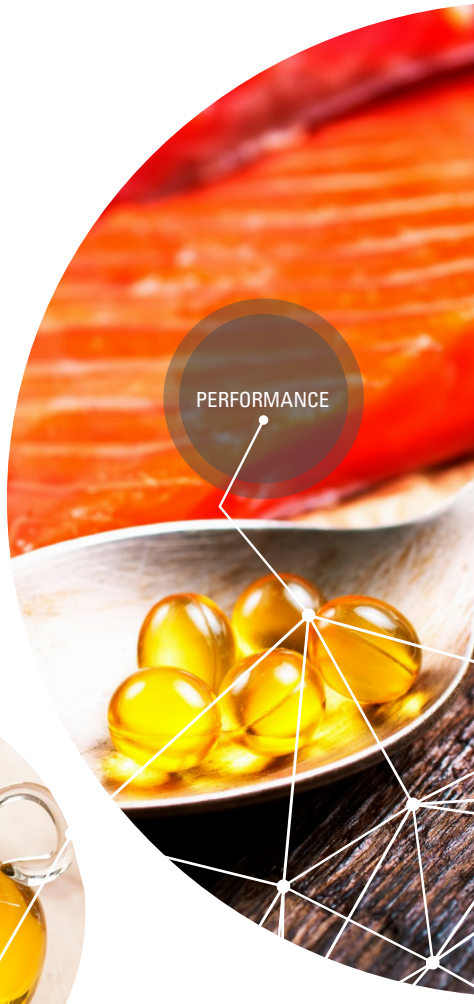
With a market that's estimated to be worth over USD 2 BN, the world's leading fish oil exporters include Peru, the United States, Norway, Denmark, Chile, China, Japan, Vietnam, Iceland, India, Morocco and Ecuador. The main importers are China, Canada, United States, Norway, Denmark and Chile.

Peru is one of the world's main producers of fish oil, manufacturing 180,000 MT in 2019. The oil is made from anchoveta containing polyunsaturated fatty acids high in EPA and DHA.

This is then turned into omega-3 fish oil for both human consumption and for the purposes of aquaculture.

Fish oil is primarily used within the aquaculture industry, with around 50% of all global consumption used to feed salmon. However, it's also popular for human consumption, boasting a range of proven health benefits.

Commercialization of fish oil is carried out in bulk, using tankers and flexitanks.



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WHEN YOU NEED TO BE SURE

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