



MAKING SENSE OF NATURE'S SCENTS

Friends, esteemed colleagues, and distinguished delegates, at the onset, let me extend a very warm welcome to you all to this edition of our report at the World Perfumery Congress (WPC).

It is with great pride and honour that we are a part of WPC 2018 here in Nice. We are fortunate to be in such close proximity to Grasse: two-thirds of French aromas, and almost 8% of the world's perfume activity is concentrated here. It is the perfume capital of the world. With a rich heritage of a thriving perfume industry since the 18th century, the vintage town of Grasse still enjoys the pivotal position in the galaxy of fragrance companies.

Before I continue, let me introduce myself. I am Priyamvada Sanganeria, Director, Ultra International BV. Driven by a passion to explore, and possessing an unquenchable thirst for travelling has helped me discover secrets of natural ingredients.

At periodic intervals in the year, Ultra International BV presents a specialised market report. Backed by extensive research, we bring you hands-on updates on the future of the fields, the scent-sational news about new origins, fresh offerings and take you up close to the essential action. It is our endeavour to help our clients make informed purchase decisions.

We work extensively with nature and also for nature. For it is our role and responsibility to be aware of the journey of the botanical to the bottle. We must ensure that we give back to nature while harnessing the benefits of these essences. As we all are aware, there are many facets of environmental sustainability, that include wild harvesting, cultivation and processing techniques, socio-cultural impacts, and of course, laws and compliances. I can think of no better international forum that brings together fragrance industry professionals, suppliers, and brand marketers. It creates an opportunity to share our thoughts on the latest issues and breakthroughs, and ideas on development of essential oils production.

Our current report has *French Finesse*. It includes views of French perfumers about the role of naturals in fragrances. We have also tried to present an insight and analysis of French natural products, road-tripping through Australia, and a whiff of Sri Lankan oils.

All in all, we strive to make your journey essentially informative and fragrantly enjoyable. I would like to conclude by expressing my sincere gratitude for your time.

Thank you

Priyamvada SanganeriaDirector, Ultra International BV

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LEMON OIL *•• Argentina*

Citrus limon L. Burm. F.

Lemon oil prices are dependent on the size of the Argentine lemon crop, and to a lesser degree on the Spanish, Italian, and Turkish crops. All of these are especially weather sensitive. Other factors influencing price include carryover levels, and the value of the US dollar.

The current Argentine lemon oil market is difficult to predict. Limited offers are being made suggesting some availability. Spot prices have eased and demand remains strong, though there is little stock carryover of lemon oil or juice concentrate.

Genova and Eureka are the key varieties of lemon grown in Argentina. Harvesting is usually from March until August. In 2017/18, the lemon area planted is forecast to remain unchanged at 48,000 hectares. However, replacement of old plants with new ones, partly to minimise the effects of frosts, will increase the number of plants per hectare and increase yields.

2017/18 crop guesstimates vary, ranging between 1.2 million MT to 1.55 million MT. Earlier in the year Federcitrus, the Argentine Citrus Federation, predicted a crop of 1.55 million MT, while the USDA predicted 1.4 million MT, based on favourable weather conditions.

Lemon production, like other fruits, faces problems relating to high taxes and logistical costs, as well as lack of access to credit. Production costs; mainly labour, inputs, energy along with local and international transport costs are increasing. This is partly attributed to an uncompetitive peso and high inflation rates of 20%-35%. In recent years the lifting of export taxes, combined with export rebates have helped reduce upward cost pressures.

Stimulated by attractive European market conditions resulting from lower supplies from Spain and Turkey, fresh lemon exports are likely to rise. Moreover, in late April, Argentina commenced its first shipment of fresh lemons to the USA. The EU, especially Spain and Russia, are the dominant export markets, but successful efforts are being undertaken to expand fresh lemon exports to non-traditional markets.

From an estimated crop of 1.4 million MT an estimated 250,000 MT of fresh lemons will be exported due to larger production and export promotion efforts. An unchanged 70,000 MT will be consumed domestically leaving 1.08 million MT available for processing, compared with 992,000 MT processed from the previous crop.

Increased processing volumes have been facilitated by the growth in production combined with the decision to impose higher quality export standards on fresh fruit. Prices remain firm for both Juice concentrate and lemon oil.

■ USD 35.00 /kilo

ARGENTINA - ESTIMATED LEMON PRODUCTION AND PROCESSING DATA ('000 MT)

	2015/16		T	2016/17			Forecast 2017/18	
Countries	Production	Processing		Production	Processing	1	Production	Processing
Argentina	1,350	1,003		1,270	950		1,400	1,008
European Union	1,269	226		1,537	284		1,515	285
USA	784	230		886	225		870	217
Turkey	670	0		753	40		679	0
South Africa	308	56		397	81		420	93
Total	4,381	1,515		4,843	1,580		4,884	1,603

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BUDDAWOOD OIL

Current market continues to show steady progress with sales and production figures rising at a healthy rate. With improved and upgraded distillation facilities, there is availability of larger batch sizes. There is an adequate on-ground stock available, implying faster turnaround time.

▲ AUD 500.00 /kilo

CYPRESS OIL BLUE

Callitris intratropica ② Australia

Despite an increase in capacity, the market continues to maintain steady levels. The growth in the aromatherapy market has led to the demand touching new high levels.

■ USD 600.00 /kilo

EUCALYPTUS HORISTES

Eucalyptus kochii 🔾 Australia

Production continues to gain momentum as demand increases. Yield from established plantations and crop rotation continues. There is healthy potential for additional supply due to investments in advanced facilities. Further, over the last few years quality has improved tremendously and high quality (>90%) eucalyptol material is readily available.

▲ AUD 35.00 /kilo



EUCALYPTUS RADIATA

The total size of Australian production is difficult to calculate, but it is estimated to be not larger than 7 MT per annum. With demand soaring almost threefold, the market remains under pressure to deliver, ultimately leading to a rise in prices. Several known investments are in place to ensure that in 2018 newer plantations will yield more products.

▲ AUD 85.00 /kilo

KUNZEA OIL

Kunzea ambigua 🔾 Australia

With grand plans to produce as much as 5 MT over the next couple of years, there are continuing investments in harvesting, distillation methods, and capacity expansion across Tasmania. These additional volumes have already been committed to meet the growing aromatherapy demand. Even with limited availability, supplies remain stable.

▲ AUD 350.00 /kilo

LEMON MYRTLE OIL

As difficult as it may seem, availability of the pure oil is now more restricted, despite strong demand. The good news is that Golden Grove Naturals is transplanting around 1,000 trees from other farms. Production will commence in June. In order to produce 400-600 kg of oil this year, GGN will be harvesting close to 20 hectares of land.

▲ AUD 350.00 /kilo





ROSALINA OIL

Melaleuca ericifolia Australia

In the aromatherapy sector the introduction of a sustainable alternative, referred to as Southern Rosalina, has been very welcome. Supplies on the mainland have been limited, as different qualities of the same botanical are produced in different growing regions within Australia. Thus, two qualities of rosalina oil are available in the market. Supplies are expected to improve in 2018.

▲ AUD 350.00 /kilo



SANDALWOOD INDIAN OIL

Santalum album ② Australia

The supply of Indian sandalwood oil from the two plantation producers continues to be steady, despite the ongoing financial instability recently reported. As such there appears to be reasonable oil volumes available. There are still issues around the stability of one of the producers, but there are some indications that they will be resolved shortly.

■ USD 3,500.00 /kilo



SANDALWOOD QUEENSLAND OIL

Santalum lanceolatum

Australia

From the Queensland sandalwood species, this is a new entrant in the market. It is golden yellow in colour with an elegant woody odour containing slight floral and citrus undertones. It is traditionally used for carving and incense. This oil feels rounded from the start and its top notes are typically sandalwood. Supplies remain sound with producers willing and able to supply 5 MT per annum.

■ USD 2,100.00 /kilo



SMOKEY TEA TREE OIL

Leptospermum from the Manuka family is often called New Zealand Tea Tree in its native land. The season of earliest harvest will commence in the month of May/June. The plant is native to Tasmania and South East Australia and is harvested for leaves and terminal branches. It grows wild and up to 3 metres tall. With almost 80% levels of alpha pinene, it is a wonderful antiinflammatory and anti-microbial agent; and a popular ingredient in aromatherapy and Ayurveda products. It is also known to act as a broad-spectrum antibiotic; it functions as an acetyl cholinesterase inhibitor and also a bronchodilator. Although commercial lines are still in the developing stage, there is oil to offer.

▲ AUD 250.00 /kilo

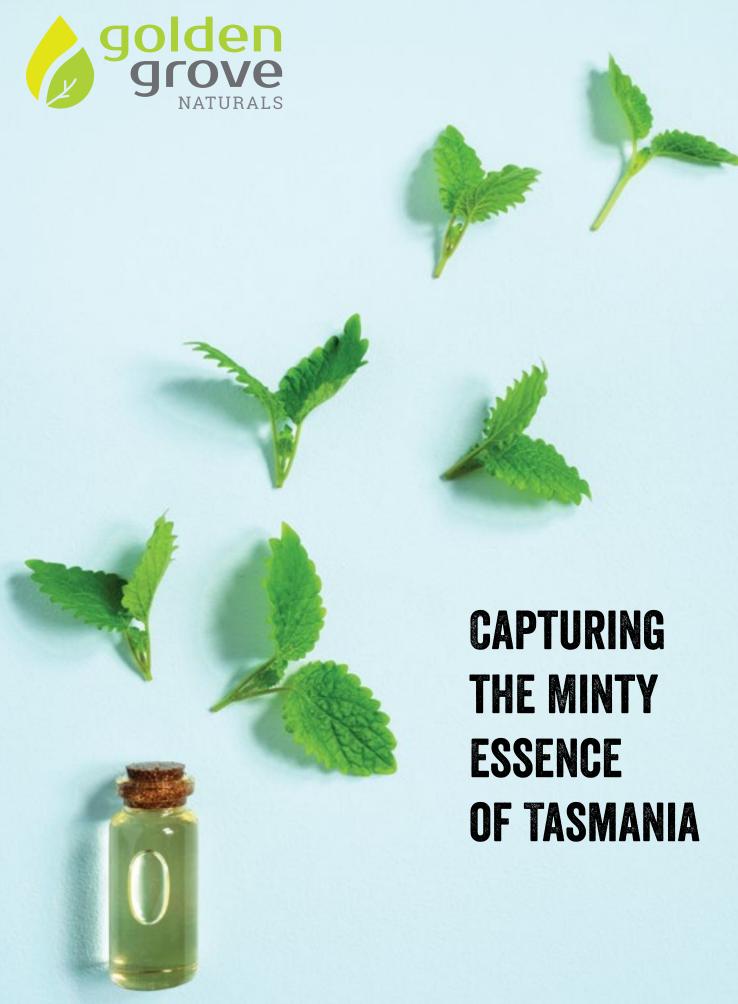


TEA TREE OIL

Melaleuca alternifolia Australia

The incessant rains during 2018 have put more pressure on production, causing no carryover stock. The situation will not relax in the short to midterm and oil prices on an anticipated rise. The production season is due to commence in June and carries on till August 2018.

▲ AUD 52.00 /kilo



Little drops of goodness brought to life.

AUSTRALIA **ROAD TRIPPIN'**



Bustling cities, breathtaking beaches, natural woodlands, and swathes of serene farmlands, Australia has it all. But there's a treasure trove of wellness just waiting to be uncorked.



Australia's traditional natural oils have an incredible history; and the new ones are telling a story that is still inchoate. The time is ripe to get close to Australia's natural bounty that is making waves in the essential oils markets. So buckle up, join this essential oil road trip across the Australian heartland!

WESTERN AUSTRALIA (WA)

As we touchdown at Perth, the capital of WA, say hello to the Wildflower State, occupying the entire western third of the Australian landmass. The population is concentrated along the southwestern coast; and moving inward the land becomes eroded, flat, and arid.



EUCALYPTUS HORISTES

Move out a few kilometres into the sparsely populated Mid-West region, you will find the native *Eucalyptus horistes*. The shrub-like mallee typically grows to a height of 12 metres; with fibrous, fissured grey bark on the lower trunk that becomes smooth as you go higher. The plant blooms between November and January and bears conflorescences with creamish-white flowers.

Abundant on the sand plains, sand dunes, and road verges, it extends through the Wheatbelt into the Great Southern and Goldfields-Esperance regions of Western Australia. It flourishes in sandy-loam soils around laterite

Its high cineol content hovers consistently near 90%, sometimes going up to 95%, thus it is closest to unadulterated eucalyptol. It has a distinctively fresh, camphor odour and is popularly used as:

- A preferred ingredient for mouthwashes
- Perfect as a decongestant, it is used as an inhalant and also in expectorants
- A deterrent for insects and effective repellant



NEW SOUTH WALES (NSW)

Nestled about 3,400 kilometres away, on the southeastern corner, is Australia's 'The First State.' Its heritage entails being the first British colony on the Australian continent. Sydney is by far the continent's most iconic tourist destination and is the state capital.



MACADAMIA NUT OIL

For years, we have enjoyed eating these crunchy delights or adding them as food flavouring. But did you know that the essential oil from macadamia is equally, if not more, divine?

A drive down the legendary Pacific Coast Drive throws up spectacular scenery of rolling hinterland dotted with macadamia farms. Along the seaboard side of NSW and Queensland, there are never-ending plantations of macadamia in the Northern Rivers and Bundaberg regions. With more than 850 macadamia growers, Australia is the world's primary producer, accounting for almost 30% of the global macadamia crop.

Among the several species of Australian macadamia only two species are commercially important, *Macadamia integrifolia* and *M. tetraphylla*. They are indigenous to the subtropical rainforests of the east coast of Australia. Macadamia nut oil is extracted from the ripe seed of *Macadamia integrifolia*, which is harvested to manufacture edible nuts.

The macadamia nut is also known as the 'Queensland nut.' As this name suggests, it is native to Australia, where it features as a staple dietary component for the native aborigines. It was first cultivated in Hawaii in 1930, and since then has evolved into the only plant of Australian origin to acquire global commercial significance.

Macadamia oil is cholesterol free, and because of an almost 82% proportion of monounsaturated oil, it is one of the healthiest edible oils in the world. It imparts a beautiful nutty flavour. It is also the closest in composition to natural human sebaceous oil, thereby easily absorbed when applied topically. The high palmitoleic acid content avoids oxidation and is a perfect match with the skin's fatty acid composition. Its benefits are widespread:

- It is ideal for salad dressings, and is also used as a palatable alternative to olive oil
- With its high smoke point of 210° C, it is perfect for shallow frying and an appetising substitute for other oils for baking
- Macadamia oil is stable and has the added advantage of long shelf life due to the presence of stable omega
 3 fatty acids, such as oleic acid
- The high oleic acid content makes it important for re-balancing cholesterol levels and reducing the triglyceride levels in the blood
- Its anti-inflammatory properties help soothe irritated skin
- Containing more than 60% oleic acid, it is excellent for softening skin, regenerating cells, and moisturising







FINGER LIMES

Deep into the subtropical rainforests, you will find this thorny understory shrub. It is peppered through the Richmond river basin of coastal New South Wales and the rugged terrains of Mount Tamborine in Queensland.

Do not let its humble looks fool you. Popularly known as the caviar of citrus, the prickly finger lime has an aromatic, smooth but pebbled skin in a triad of colours, ranging from green to brown to red and almost black. Break one open and you will find unique separate juice vesicles resembling caviar and bursting with tangy flavour. It is rated 'superior' to other limes.

The trees are erect and can grow up to 10 metres. The prickly fruits are usually cylindrical in shape, up to 100 mm long, 20-30 mm in diameter and contain seeds. The miniscule oil cells on the rind give it a glossy appearance. The compressed juice vesicles burst out, but do not break on cutting. Ease of freezing without compromising on flavour or texture allows all-year-round access to this fruit. It helps in:

- Boosting immunity since it is a powerhouse of vitamin C
- Delayed aging of the skin through trapping the free radicals that damage skin cells, in addition to catalysing collagen production in skin
- Enhances eye health with its impressive levels of Vitamin A
- · Quite a favourite with chefs for its use in creative culinary craft

ROSALINA OIL

Wild Rosalina trees abound in the wet, swampy lowlands of this region; the tree can also be found in Victoria and Tasmania, although characteristic lavender fragrance chemotype is predominantly found in New South Wales.

Initially used by the aborigines to treat skin imperfections like acne and warts, Australia gifted the world Rosalina in 1922. *Melaleuca ericifolia*, commonly known as the Swamp Paperbark Tree, contains high linalool levels, also found in lavender.

The Rosalina tree can reach 8 metres in height and produces white flowers in late spring. Its oil is extracted through steam distillation of the leaves, twigs, and branches. It is a mild cineole aromatic oil with a gentle lavender back note, thereby deriving its common name, Lavender Tea Tree. Many use it as a subtler version of tea tree oil with lavender tendencies. It offers a host of physical and emotional therapeutic benefits:

- · With antibacterial, antiviral, decongestant, immune-stimulant, and sedative properties, Rosalina is gentle
- An excellent topical antiseptic, especially when blended with tea tree oil
- It works effectively on acne and other uncomfortable skin conditions that require a gentle healing oil
- Emotionally, Rosalina is calming and induces relaxation and sleep
- Its versatility to blend well with a host of oils makes it an effective immunity booster and natural air purifier

TASMANIA (TAS OR COLLOQUIALLY TASSIE)

Enjoy the ride across the Bass Strait to Tasmania, 240 kilometres off the southern tip of Victoria. How does the smallest Australian state have so much to offer? With craggy peaks, dense forestry and natural lakes, Tasmania, also called the Switzerland of Australia, revels in its isolation and awes with unspoiled natural wonder.



TASMANIAN MINT OIL

Peppermint oil, *Mentha piperita*, was one of the first essential oils produced in Tasmania in the late 1970s, using the prized Black Mitcham cultivar, renowned for its rich, complex flavour, and aroma. A medium-sized perennial herb, this can grow up to 1 metre in height. The dark green to blackish, square stem bears fragrant deep green leaves. The scent is similar to eponymous mint, with herbaceous notes with fruity and spicy back notes. Tasmania's climate with warm summer days, ample sunshine, and cool nights are ideal for the plant to grow profusely. In addition, the lack of endemic diseases enables it to produce the finest peppermint oil available on the market

Production today is still from the prominent "heritage" cultivar. These best growing conditions support the original genetics of the cultivar and present more complexity in aroma and flavour. Compared to that of the highest quality Willamette Oil, they offer a special alternative for the perfumer's and flavourist palette. Peppermint oil advantages lie in:

- Among the best for digestion, nausea, vomiting
- Beneficial for colds, influenza, and sinus problems
- In a dilution of 1% or less it may relieve skin irritation and itching
- The essence aids in concentration and addressing fatigue

PARSLEY OIL TASMANIA

Move into the cool temperate climate of North-Eastern Tasmania and you will find a profusion of Tasmanian Parsley Herb Oil, *Petroselinum crispum*, also called Triple Curled Parsley. This essential oil is sustainably grown and farm-harvested in mid to late summer. The leaves are steam distilled and yield pale yellow oil with the herbaceous odour of 'newly cut grass.' From time immemorial parsley has been used to cure many ailments.

- Protects against infections and aids in the treatment of acne and pimples though direct application should be avoided
- Known for its anti-bacterial, anti-inflammatory, anti-microbial and astringent properties
- Widely used for epicurean flavouring, specialised fragrances and in aromatherapy

FENNEL OIL

Fennel Foeniculum vulgare is well suited to the Tasmanian climate; growing strongly in spring and accumulating oil under the mild, sunny days of summer and early autumn. It is harvested from late February to mid-May. A perennial herb, fennel is erect, green, and grows to heights of up to 2.5 metres, with hollow stems and finely dissected filiform leaves.

Fennel has a distinct licorice flavour and aroma. The oil exudes a sweet smell similar to anise. Today, this unique oil holds many beneficial characteristics:

- · One of its most common uses is in the kitchen. Its potent, flavourful nature adds a strong, savoury touch
- A drop of fennel oil can help with digestion
- It also helps promote healthy metabolism, liver function, and circulation, and healthy respiratory system





Fortunella japonica

There is considerable activity at the end-user level for this oil. This has prompted developmental work and implementations to expand capacity, which is currently around 5 MT per annum. Production estimates for 2018 peg the figures to be at par with last year's since the cultivated area is well protected from unusual climatic conditions.

■ USD 230.00 /kilo

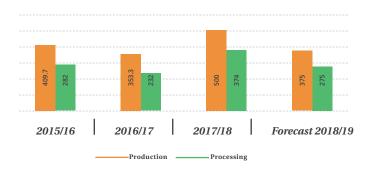


Citrus sinensis

The forecast for the new 2018/19 crop, which starts in May is lower, in part because it is an off year, when the trees are more stressed following the large 2017/18 crop. In addition, the trees were partially damaged by last September's dry weather. The 9th May Fundecitrus forecast covering the groves in São Paulo and South of Minas Gerais, is of 288 million boxes, representing a 28% reduction compared with the season 2017/18. The USDA's earlier guesstimate for the total Brazilian new crop was 425 million boxes, down by about 75 million boxes or only 15% compared with 2017/18. At this level of output, the amount of orange processed in São Paulo and South of Minas Gerais will fall to an estimated 238 million boxes assuming 50 million boxes for the fresh market. It is evident that for the new season, supply will be reduced because of the lower crop leading to fewer oranges being processed for juice and oil. An increase in price is expected for the new crop. Orange oil demand is firm, in part because of the lower inventory. The bumper 2017/18 crop saw a combined production of orange oil and d'limonene of approximately 61,200 MT, of which approximately 30% was d'limonene. Assuming approximately 275 million boxes are processed in 2018/19, the combined orange oil and d'limonene production will fall to 45,000 MT. The trend in orange juice (OJ) consumption will be an important factor affecting orange processing levels and orange oil supply. For a variety of reasons, global OJ consumption has been declining but recently consumption, at least in the USA, appears to have stabilised if not slightly increased. However, some are still forecasting a downward trend in global OJ consumption. Thus considerable uncertainties still remain in the market. Uptake of orange oil in the past few months has been slower than normal, resulting in prices coming under pressure. The combination of a slow limonene market in the USA, and the higher forecast for the 2017/18 Brazilian crop saw oil prices ease somewhat. However, due to the anticipated lower 2018/19 crop, supply will be limited in the coming months. All eyes will be on new crop pricing in June, but an increase in price is expected, as oranges available for processing will be less than the last crop.

L USD 8.00 - 9.50 /kilo

BRAZIL ORANGE PRODUCTION AND PROCESSING - BRAZIL MARKETING YEAR (MILLION BOXES OF 40.8 KG)



Chamomilla recutita L.

Chamomile is a booming essential oil crop in Bulgaria, widely used as a herb. Interest in chamomile oil has increased in the past few years, which has led to the emergence of new producers in other countries. Despite this, Bulgaria has retained its position of quality due to higher chamazulene levels.

MA NA



Lavandula angustifolia

Bulgaria reports that domestic producers do not have a good forecast for lavender oil. The weather is a big factor, but as most gardens have been cut in the off-season, there is no likelihood of over production. Stocks in Bulgaria are exceptionally low at the moment. Forecasts predict that supply will be short and unable to meet demand, leading to a price hike, as in 2017. Demand is still strong but limited drums are available. With the prevailing tense situation companies have been calculating their remaining needs and have started to stock up until the new crop arrives. Similar conditions are predicted to prevail for the coming two months. The new crop harvest will become available in August. If it is a good crop with better yields then this may satisfy current demand, and lower prices. However, if the weather conditions are not supportive, then there may be a continued supply deficit leading to excess demand and elevated prices.

L Euro 115.00 /kilo

Rosa damascena

In 2017, rose oil production peaked with a number of companies holding sizeable unsold stocks; thereby putting downward pressure on prices. Some companies have even claimed that they will not produce rose oil in 2018, but time will tell. However, an issue seems to be the non-availability of good quality oil at all times. 2017 weather conditions resulted in rapid and simultaneous blossoming in all production regions, and made it impossible to harvest and process the whole crop.

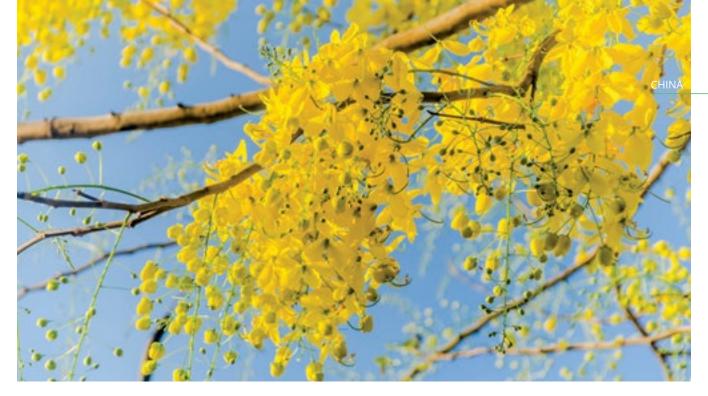
Another issue is the presence of adulterated products on the market that are sold as "Bulgarian rose oil." In order to ensure it is pure Bulgarian, always ask your supplier to provide a PGI certificate of conformity before you make a purchase. Only products with a PGI certificate and mark can be labelled as "Bulgarian rose oil." A PGI certificate and special mark, is symbolic of a guarantee of true authentic quality of 100% pure and natural Bulgarian rose oil.

Euro 7,700.00 /kilo

Achillea millifolium

In 2017, despite sufficient supply quantities, prices were dearer than average, due to a large spike in demand. Blue Yarrow has a diffusive aroma that is sweet and fresh which is very effective in aromatherapy applications, and lends an intriguing note in natural perfumery when used in trace amounts.





Photos Blossoming Cassia Tree

CASSIA OIL



Cinnamomum cassia Blume (Lauraceae)

Over the past few months, there has been an unprecedented increase in demand rather than shorter supplies; and markets witnessed escalating prices. The oil crop season starts in June/July and resumes in autumn during October/November. As the price of cinnamon continues to rise, the farmers' enthusiasm runs high. Currently however, the June to August crop is underway, and there is a change in the market. Supply is stable and markets witnessed more than adequate raw material. Production also rose, thereby pushing down prices marginally. Prices for the so-called "new method" material are stable. The method entails quality supplied when the downstream product is either cinnamic aldehyde or natural benzaldehyde. In view of dwindling production volume in the last season, the stock is limited but labour, plant fuel, and equipment modification costs keep rising due to environmental policies. In the short term, there is limited scope for a lower price; there will be a narrow range of fluctuations.

■ USD 44.00 /kilo

CITRONELLA OIL



Cymbopogon winterlanus

The crop season for citronella starts in April and continues till October. This year there is confidence that production will increase since the growing area has expanded. Currently, domestic stock is limited amidst an active demand, and prices are stable on the higher side. Predictions suggest that prices will be maintained at these levels until new production arrives. Current consumption is primarily from available stock, and partial oil will be available by the end of April and May. The new crop is expected in June.

■ USD 33.00 /kilo





Eucalyptus globulus

May to July yields low output but October to December tends to be a better crop season. In mid-February, owing to the Chinese Spring Festival, the purchase price of crude oil in the production area fell drastically as compared to earlier years. As a result, factories and traders are stepping up on storage and are stocking up. The price of raw material rose more than 15% in just one month and hit a new high. In recent years, due to the high profits and enthusiasm of oil farmers running high, there has been excessive use of pruning shears to provide the raw material for oil distillation. Eucalyptus trees also need sufficient recovery time, so this prompts a decrease in raw material with higher prices. The artificial factor is not ruled out completely, but in case of a demand exceeding supply situation, it is hard to see a sharp callback in the near future. Supply is rather limited since, influenced by the farming season and fire ban, collection is hard. New material will not be available soon; supply will still be intense, and the market is expected to remain strong.

■ USD 34.00 /kilo





Allium sativum L.

The garlic season begins in August and extends till November. The 2017 season is over. Due to the persisting instability of fresh garlic prices, the variations in stock price lead to differential pricing for the oil. The restriction imposed by the environmental policy has affected output, and rates are expected to remain in a tight range until new production arrives. Raw materials are consumed; new garlic will come into the market only by July, and new oil produced by September has a great chance to bounce up, influenced by environmental pressure and production cost factors. The drop in price was affected by demand but now this has stabilised due to the increased cost of raw material. It is expected to remain so in the near future.

■ USD 350.00 /kilo

Pelargonium graveolens

The new crop begins in April and a small quantity has entered the market but with low geraniol and beta-Guaiadiene content the quality is sub-standard. The price for 100% natural qualified oil is still high, and going by plantings this year, sentiments are rather subdued.

■ USD 300.00 /kilo



${\it Zingiber\,officinale}$

The season starts in November and goes through till December. Demand is stable, with negligible fluctuations in price. However, affected by the strict environmental policy, there is a drop in raw material as compared to previous years, and production is limited. Prices are likely to remain at current high levels albeit with small fluctuations.

■ USD 90.00 /kilo



Lavandula angustifolia

Harvested in June every year, 2017 saw a decline in production in both domestic as well as international markets. The supply was tight and prices have maintained their momentum in an upward climb. This year, the growing area increased but the price is expected to be at elevated levels until new production enters the market.

■ USD 155.00 /kilo

Illicium verum

The crop season extends from November to January. Last season the prices soared by more than 20% and so the farmers are more aggressive this season. However, in January most of the anise trees (which are not hardy) suffered from severe snow and icy weather conditions in the main producing region of Guangxi. In February hailstones destroyed most of the anise and buds; thus leaves and fruit are rare this year. There is a 50% fall in production in Guangxi province and a 55-60% decrease in Guangdong province. Considering the new crop season is in October, no new material will hit the shelves for a long time now, and any material in the market is from carryovers. The restricted supplies of star anise oil and anethole have led to a price rise.

■ USD 19.00 /kilo

Melaleuca alternifolia

The crop season begins in August and continues till October. Continuous rains in the main production areas of Guangdong, Guangxi and Fujian Provinces affected last year's production, which had fallen. The market is tight, and prices are expected to continue on their ascent in the short term.

■ USD 29.00 /kilo

Valeriana officinalis

The new season begins by the end of July and carryovers are limited now. Since it is primarily used in traditional Chinese medicine, this oil does not command volumes. Considering that output is restricted and cost for raw materials and production is on the rise, customers who have specific demand may consider purchasing.

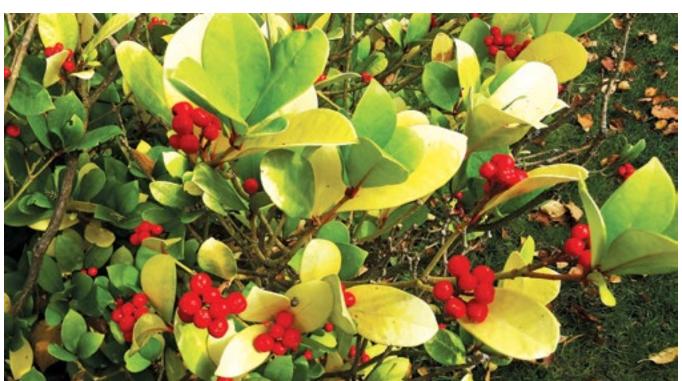
■ USD 790.00 /kilo

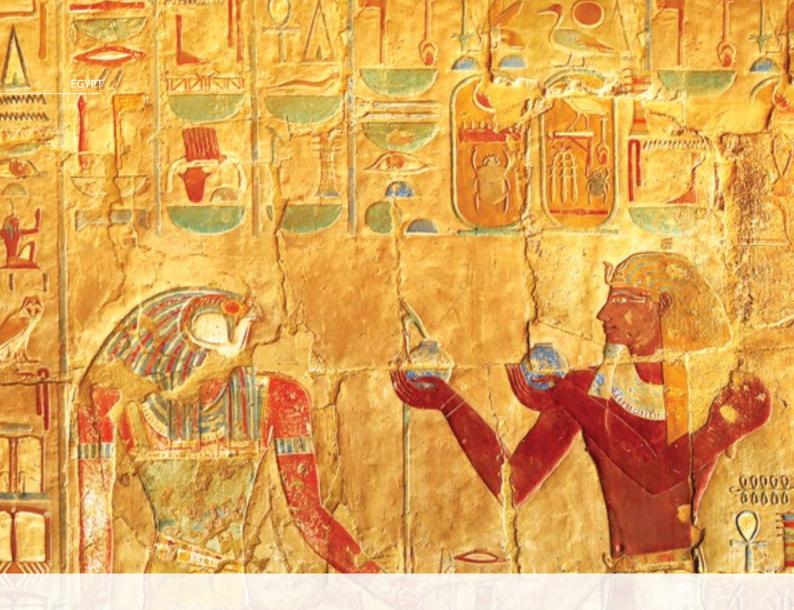
Gaultheria procumbens

Market stocks are on the low side; prices are rising slightly, and demand has lowered. This is a wild, high mountain pure plant that is difficult to collect. With the continuous increase of labour costs, compounded by the low oil yield of wintergreen, farmers are reluctant to harvest because of the low margins. Production is predicted to remain low this season, and the oil price is expected to climb if demand increases later. Supplies have stabilised after a short period of uncertainty, perhaps the only product from the Yunnan Province where this is the case.

■ USD 55.00 /kilo

Photo Wintergreen with berries





BASIL OIL LINALOOL

Ocimum basilicum L

The basil oil linalool harvest started in early August and finished in October.
During 2016 market supplies were short.
As a result, prices pushed up with very active demand in early 2017. The prices skyrocketed due to farmers' unrealistic price expectations for the oil. Today demand continues to remain high for this oil. There appears to be good availability of stock in the market but with a high-price.

■ USD 290.00 /kilo

BLUE CHAMOMILE OIL

Chamomilla recutita L.

The demand and supply remain strong due to sufficient availability of stock.

Both the demand and supply peaked significantly in the past few months.

Seeds are planted after summer and distillation takes place around March.

Growing conditions are favourable, and the projected harvest is comparable to last year's crop. Currently prices are stable but with emerging demand a higher price is expected in the near future.

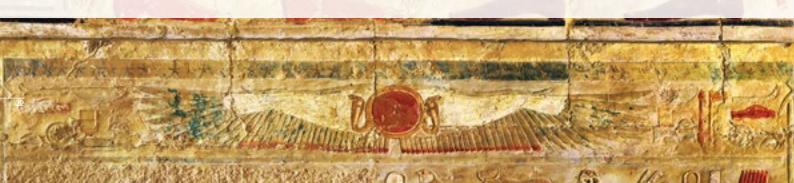
■ USD 800.00 /kilo

CUMIN SEED OIL

Cuminum cyminum

The harvest for cumin seed will commence in May. After the 2017 harvest, demand and supply appear well balanced and prices stable. Currently the demand and supply situation is steady and comparable with last year's, though demand is gradually rising and so are prices. However, it is anticipated that prices may push up in the coming months.

■ USD 130.00 /kilo



CORIANDER HERB OIL

The market in 2017 remained firm, as there was sufficient carryover of stock from the previous year. This ensured sufficient supply in the market. Prices for Egyptian quality remain higher than that of other origins, but some prefer this type and are happy to pay the premium for the oil.

■ USD 110.00 /kilo

GERANIUM OIL



The demand for this oil has increased slightly due to the availability of the product. As of now prices remain stable since quantities are available. We expect the price will increase as the demand increases.

▲ USD 110.00 /kilo

JASMINE ABSOLUTE

Jasminum grandiflorum L. Egypt

The good news is that supply and demand are increasing with availability of sufficient stock; in fact demand is marginally higher than last year. Currently, the market is stable with few stocks available at origin and the next big quantities will be available with the new crop in June 2018. This year prices showed a sudden rise and in the coming months stability in prices is anticipated. There was a bumper crop in 2016 leading to a crop surplus that continued to exist before the start of the 2017 season. Growing conditions are favourable and it is expected to be a good crop.

L USD 3,200.00 /kilo

MARJORAM OIL

Origanum majorana



The marjoram oil market price continues to be stable as the supply evens out the demand. However, compared to last year, demand is inching up and prices are set to increase in the coming couple of months.

■ NA

NEROLI OIL

An inadequate supply of oils keeps current market pressures in place and demand on the rise. Prices will be determined at season end. 2018 witnessed a more than 30% decline in total production in comparison with last year due to climate conditions. Prior to this year's harvest quantities were booked in advance, ultimately leading to a constrained supply. Demand has overtaken supply and it is predicted that all quantities will be sold and the Egyptian market completely devoid of stock. The dwindling crop as a result of climatic conditions has thrown market forecasts into disarray.

■ USD 4,500.00 /kilo

VIOLET ABSOLUTE OIL

Viola odorata ③ Egypt



The demand and supply of this essential oil has increased significantly due to availability, but there are a few points to note. Due to a slump in prices over a span of time many farmers have given up farming this crop. As a result, it is anticipated the production figures for 2018 may decline by 40% in comparison to last year. Currently, prices are stable but may rise in the near future.

L USD 1,800.00 /kilo

PARSLEY LEAF OIL

Petroselinum crispum Egypt

Our analysis shows that the recent stagnation of oil production in Egypt has reached its limit. Despite this, general market sentiment remains positive with a small volume available at origin.

■ USD 140.00 /kilo

PETITGRAIN MANDARIN OIL

Citrus reticulata



2018 saw an overall decrease in petitgrain mandarin oil production even as the demand for this oil continued to increase. Due to limited production and high quality, prices have risen dramatically. If demand continues to increase, higher prices can be expected.

■ USD 450.00 /kilo



Bordeaux, baguette or brulee?

CLARY SAGE OIL

⊘ France

Salvia sclarea

The climate in southern France is perfect for clary sage to thrive, especially since it is averse to late frosts. This year French yields and production are likely to be high, as producers have been investing heavily to expand the growing areas. Near Provence approximately 2,000 hectares of clary sage plantation was sown last year. However, at present, the price of clary sage oil has taken a sharp tumble. The customary buyers for sclareole extraction have abstained, and this has made a significant dent for oil producers. Those into oil production are expected to stand out through the quality of their oil. These producers are resorting to optimal techniques of harvest - technique de préfanage - before distillation to ascertain the grade.

L Euro 110.00 /kilo

CORIANDER SEED OIL

⊘ France

HELICHRYSUM OIL

⊘ France

Coriandrum sativum L.

Continued investments in new plantations have resulted in the expansion of growing areas, increasing to 200 hectares in 2017. In 2018 this figure is estimated to reach 300 hectares. However, the additional areas have yet to make a significant contribution to the quantity of oil produced.

L Euro 85.00 /kilo

Helichrysum angustifolia

Last year's harvest of Helichrysum was good resulting in total production of almost 500 kg of essential oil. Output continues to grow, but there is a growing demand from the aromatherapy sector. Given the high costs of production, in part due to low yields, producers will be reluctant to see prices slide.

TARRAGON OIL

♀ France

Hyssopus officinalis

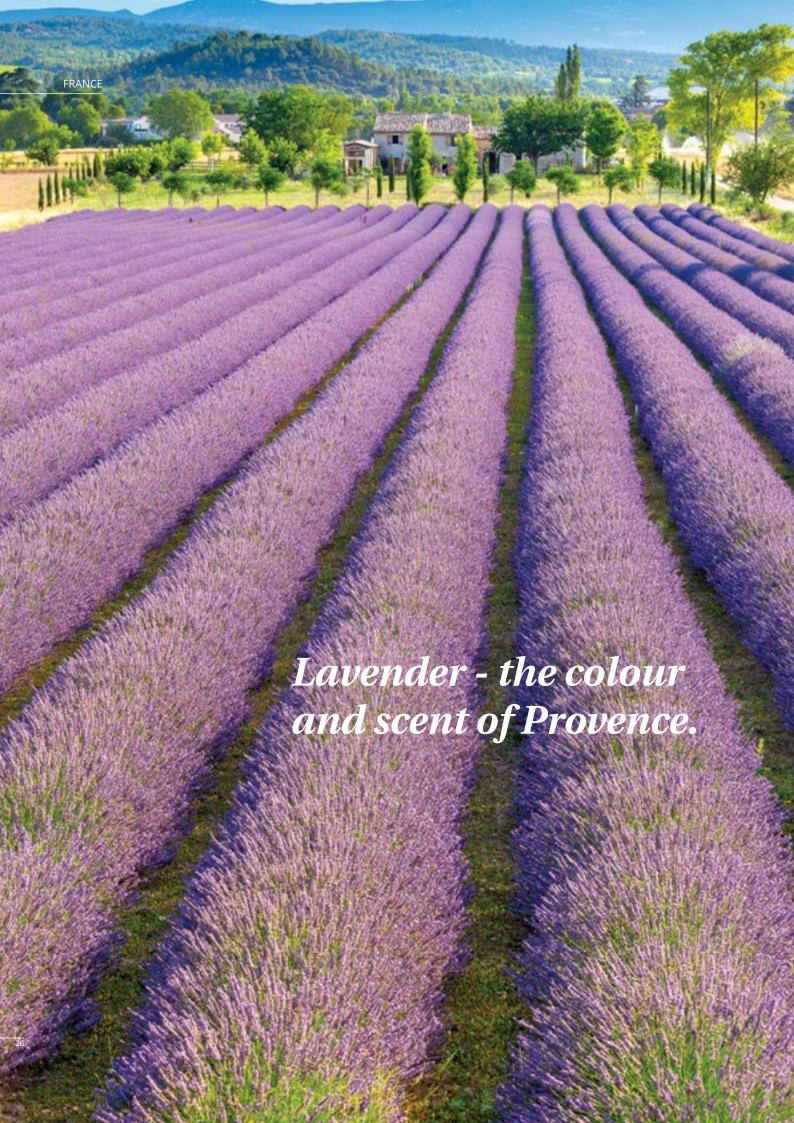
Hyssop Officinale, popularly known as the common hyssop, is a garden herb from the mint family. It is a Mediterranean and medicinal plant known since the ancient Greek era, cultivated on Valensole Plateau as well as in Drôme Provençale. In-depth research is undertaken by French organisations in order to produce a standard essential oil quality just like Melisse, and also to increase the oil's utilisation. Adopted cultivation methods are rather similar to those of lavender and lavandin. The harvest, too, takes place around July and August.

MA NA

Artemisia dracunculus

France's annual output of tarragon oil is approximately 1,500 kg. One of the single distillers, also a part of the supplier network, produces an annual output of around 1,000 kg. Tarragon is a plant that requires appropriate irrigation for its harvest. Unfortunately, Southeast France lacks the means for suitable irrigation, since it is not commonly practised in this region. However, if there is a reasonable demand for this oil, new techniques can be adopted to ensure implementation of irrigation. The climate in the south of France is congenial for the harvest and distillation of quality tarragon essential oil.

MA NA



LAVANDIN ABRIALIS OIL France LAVANDIN SUPER OIL France

LAVANDIN SUMIAN OIL

③ France

Lavandula hybrida abrialis

The market is in slowdown and output is declining on a yearly basis. With only 700 hectares of plantation remaining, new arrivals are not expected in the near future. The material is in limited supply corresponding to a weak demand. Most end users have turned to reformulations to ensure that their product is not at the mercy of an oil that is facing extinction.

L Euro 55.00 /kilo

Lavandula hybrida

In 2017, many of the lavandin growing regions of France experienced an exceptional drought, leading to a decline in production to 25 MT. After assessing the extent of drought damage, users looked to other origins, such as Spain.

Euro 40.00 /kilo

Lavandula x intermedia var. sumian

Currently, there has been a tense situation at source since there are no stocks available. An expansion of production is predicted for lavandin Sumian as it is more resistant than lavandin grosso.

Euro 60.00 /kilo



Lavandula angustifolia

True lavender comes from the seed of the plant. The most popular and best-known varieties are Rapido and Carla. Among the clonal lavenders, which stem from cuttings, Maillette, Matherone, and Diva are among the more renowned varieties. Last year, the lavender harvest suffered a severe loss due to sub-zero temperatures in some areas during the growing season leading to a substantial fall in yields. Currently there is no available stock. Demand for true lavender and clonal lavender continues to be significant despite strong competition from Bulgarian lavender with its high productivity and attractive price points. The plant displayed some toughness in the face of the last drought; in fact, better than lavandin in the opinion of some.

France's main lavender production areas include Plateau d'Albion, Drôme Provençale, Alpes and modest quantities on the Plateau de Valensole. Like lavandin, these areas hold much importance for lavender. Through continued investments and expansion of surface area, French farmers hope to become the leading lavender producing country in the next few years. The aromatherapy industry in the USA is an important market for French production.

▲ Euro 180.00 /kilo



Lavandula Officinalis

The principal cultivating areas of lavandin grosso oil are the Valensole Plateau, Albion Plateau, Drôme Provençale, Vaucluse, and Ardèche, in the southeast quarter of France.

Among the several planting areas, lavandin grosso remains the most popular variety followed by Sumian lavandin. However, Sumian lavandin is fast replacing lavandin grosso, as the latter is severely afflicted by insect pests, especially in the eastern part of the Valensole Plateau. The nurserymen (producers of lavandin plants) are much sought after and see their orders booked almost two years in advance, as there is more than adequate demand from both domestic and foreign markets. They should be able to meet this demand, especially with the inception of new nurseries.

Successive droughts in 2016 and 2017 damaged the plants and adversely impacted production. Yields per hectare were severely reduced leading to much lower production than normal. Due to the severity of the 2017 drought it is expected that both yields and production volumes will be compromised for at least another year or so. Anticipation of the increased areas of production should help maintain the volumes of the past three years (1,500 MT) and address the demand that is estimated around 1,800 MT.

The South East quarter has experienced a changing climate, leaning more towards being dry. As a result, lavandin culturists have started reviewing the working method of several cultures, in order to remain competitive. They are changing towards a near biological mode of culture and focusing on the longevity of the plants rather than the yield of essential oil. Lavandin grosso suffered enormously from the drought of 2017; and worryingly vegetative awakening has been noted, even if nothing is 100% certain at the moment. We must expect a year or more of volumes being compromised.

Euro 25.00 /kilo



DOES FRAGRANCE HAVE A SOUL?

Nathalie Sahut , Fragrance Influence, France

The perfumer's palette comprises a very wide range of raw materials. Both synthetic and natural ingredients are essential to the creation process.

The more complex and subtle features of natural ingredients enrich the olfactory quality of a fragrance, adding opulence, volume and strength. Perfumes that contain natural raw materials in their formula often have more character. These fragrances are more sophisticated, with a true identity and a unique olfactory signature.

In each olfactory family, perfumers tend to treasure particular natural ingredients for their own reasons.



CHEERFUL CITRUS

Highly volatile citrus notes are often used in top notes because they tend to evaporate fast. For Vanessa Prudent, perfumer for Argeville, citrus essences create a very pleasant energising, uplifting effect from the start.

Essential oil of mandarin is highly appreciated by numerous perfumers, including Laurent Verlaque, perfumer for Expressions Parfumées, since its scent is very close to the soft, sweet pulp of the fruit. The mandarin has a sunny, luminous, stimulating effect. Fragrances that contain mandarin are sparkling and joyful!

AROMATIC FRESHNESS

Lavender is a natural ingredient that has been used in perfumery for a very long time. This native Mediterranean plant was used by the Romans to perfume their baths and preserve linen. Nowadays, lavender is harvested mechanically and not by hand as with rose or jasmine. The yields are superior. That is why lavender is one of the least expensive natural essences used in perfumery. Today, essential oil of lavender is used widely in masculine fine fragrances. In fact, it is one of the basic elements in the fougère accord. According to Stéphane Garavagno, perfumer and president of Parfums Plus, lavender brings freshness and timeless elegance to fragrances. In aromatherapy, lavender is also well known for its soothing, relaxing virtues.



FLORAL ELEGANCE

The opulent and comforting scent of orange blossom has been appreciated since ancient times. Orange blossom absolute brings warmth and well-being thanks to its honeyed notes. For Florie Tanquerel, perfumer for Cosmo International Fragrances, the velvety effect of orange blossom brings harmony and femininity to fragrances.

In the floral family, the rose is one of the noblest raw materials of the perfumer's palette. This sublime flower has been used in perfumery for thousands of years. Its intense sweetness symbolises love and passion.



"I love rose absolute for its warm shades of honey, wax, spice and hint of tobacco. Rose is very costly and I use it carefully depending on my projects. Yet even in very low doses, rose lends depth and sensuality to my fragrances."

Stéphane Garavagno - Parfums Plus Perfumer and President

The tuberose is one of the most fragrant plants in the world. Today this characterful white flower is mainly cultivated in India and Egypt. Its milky notes, exotic ylang-ylang hues and smooth orange blossom inflections make for an intense and heady scent. Laurent Verlaque appreciates the opulence of this beautiful floral note, its richness, and its bewitching and captivating effect. Perfumer Vanessa Prudent loves the tuberose for its interesting combination of solar and green floral notes.

The everlasting flower grows wild in the South of France and especially in Corsica. It has a strong personality and reveals from the start a curry scent. This pretty plant with yellow flowers goes on to release other odours close to rose and camomile.



"Along with exhilarating, honeyed notes, everlasting flower offers salty and spicy shades. It's wonderful to associate it in my leather, amber and woody accords in which this Mediterranean blossom reveals many of its facets."

Anaïs Fournial Independent perfume creator

THE EXUBERANCE OF SPICES

The spice realm includes cardamom from Sri Lanka and southern India. This spice is highly appreciated by perfumers for the strength yet delicacy of its smell. The charm of cardamom is characterised by elegance, discretion and freshness combined with an exotic spiciness. For Vanessa Prudent, cardamom has the power to enhance an accord and brighten up her fragrances.

Pink pepper scent is at once very spicy and delicate. Piquant and strong, it is also very smooth, making it highly appreciated by perfume creators. Anaïs Fournial considers pink pepper as a 'great lady'. She describes this stunning spice as powerful, explosive and ultrafeminine, and readily includes it in her creations.

The timur berry is also surprising because it develops fresh, sparkling citrus hints, such as pink grapefruit. Its light, herbaceous effect with a fruity touch of mango is totally astonishing!



"Timur acts like a true fragrance booster. I love to use the essence of this berry from Nepal in my creations for its audacious inflexions and uplifting effect."

Florie Tanquerelle Cosmo International Fragrances Perfumer

From a botanical point of view, allspice (hot pepper of Jamaica) is close to black pepper. Thanks to its very powerful spicy scent, it provides fragrances with unusual depth. Florie Tanquerel appreciates its cinnamon and clove notes because they illuminate her compositions. She associates it divinely with the smooth warm notes of cocoa.

Finally, vanilla is also a spice comprising hundreds of different fragrant molecules. When associated with other scents, vanilla may reveal a floral, spicy, sensual, hot, or woody side. According to Stéphane Garavagno, whatever it is associated with, vanilla remains decidedly dazzling, irresistibly feminine and sensual. It is an infinite treasure!



THE SENSUALITY OF WOODS

In India, cypriol, also called nagarmotha, has been used as a fragrance since time immemorial. In fact, the roots of this plant were used to perfume women's clothes including traditional saris. The particularly persistent scent of cypriol is woody and earthy. Florie Tanquerel adds cypriol to her fragrances because it brings an intensity right from the top notes along with animal and leathery facets.

A native of Indonesia, patchouli is an absolutely indispensable ingredient for building a chypre accord, which is mainly composed of bergamot, jasmine, oak moss, rose, labdanum and of course patchouli!



"Natural essence of patchouli brings power and persistence in my formulas designed for fabric softeners. Its particularly earthy, airy, strong and vibrant scent enchants our senses and gives volume to fragrances over time."

Laurent Verlaque, Expressions Parfumées Perfumer specialist in functional perfumery

One of the most expensive natural essences in the world is oud, an ingredient with a very strong character. Its woody, leathery, animal notes are ultra-powerful. Some perfumers, like Florie Tanquerel, who are particularly fond of fragrances from the Middle East, like to use it either in trace or in overdose depending on the project.



Majestic and precious Indian sandalwood is increasingly rare and thus more and more expensive. It releases an extremely smooth and velvety woody scent. Its notes are warm, sensual and slightly animal. Its odour is simply bewitching. The creamy gourmand facets of sandalwood make it a firm favourite of perfumer Stéphane Garavagno.

Lastly, the elegance and strength of vetiver seduce fragrance creators who appreciate its woody scent with lightly smoked notes. The plant's smell evokes the earth and plant matter. Laurent Verlaque particularly appreciates a special quality of vetiver that goes beyond its woody elegance and opens up a fresh, sparkling grapefruit facet.

THE ENCHANTMENT OF RESINS AND BALMS

Incense, with its precious and spiritual combination, has existed since Ancient Greek times, when it was used in religious rituals. Along with myrrh and gold, incense was one of the gifts offered by the three kings to the infant Jesus. Throughout history, people have burned the bark of incense to release its highly magical scent. Its strong odour is magnificently ambery, spicy and even peppery. It can conjure up dusty wood that has just been polished, or the inside of a church. Incense lends fragrances a spicy smell from distant lands, combining mystery with a strong character and a power of seduction.





"The balsamic warmth of resins such as incense and benzoin brings richness and oriental shades to the background of a perfume."

Vanessa Prudent - Argeville Perfumer

To conclude, we might draw a parallel with painting: natural raw materials bring more nuances to perfumed compositions. They give colour and make fragrances livelier. They illuminate perfumes and bring radiance. Whatever the proportions used, natural raw materials lend life to perfumers' creations. Natural ingredients give a soul to their fragrances.







Amyris balsamifera

Demand for this product is currently at a record high. There are back orders of almost 2 to 4 months for this oil. The availability of raw material has helped maintain the total production at a higher level. The major area of concern is high fuel prices. This has affected production as well as shipping costs, which have almost doubled over the last few months. Current market pressures remain in place and prices have been fluctuating, as buyers tend to get anxious about securing stock.

■ USD 65.00 / kilo



Vetiveria zizanioides

Unfortunately, heavy rains negatively impacted the harvesting of this material and led to a reduction in total production. The short supply and high demand for vetiver oil has escalated prices. High fuel and freight charges have impacted the selling price. Shipping costs have almost doubled over the last two months. Currently, demand is increasing due to its higher beneficial value creating back orders of 2 to 4 months.

▲ USD 380.00 / kilo

BASIL OIL HOLY

India

Ocimum sanctum

Basil or Sacred Tulsi, popularly called the "queen of herbs", comes from the Lamiaceae family. The harvesting season is over and material is difficult to find.

▲ USD 200.00 /kilo

JASMINE GRANDIFOLIUM



Jasminum grandiflorum

Scant rainfall affected the crop last year, and therefore production fell by around 10-15%. Consequently prices increased by similar margins. 2018 may not bring any respite; rather there may be additional upward pressure on prices due to the little carryover thought to be available.

▲ USD 2,850.00 /kilo

Mentha arvensis

Approximately 80% of India's *M. arvensis* crop is grown in the state of Uttar Pradesh, 10% in the state of Bihar and the remaining 10% in Punjab and Madhya Pradesh. The harvesting of *M. arvensis* will commence in June 2018. This year's crop is good, but oil quantity is subject to the amount of rain at the time of harvest.

2018 could see a strain on supplies. Zero carryover stock from last year has pushed up prices. The slowdown in natural mint and the advent of synthetic alternatives has resulted in a significant decrease in growing areas.

■ USD 18.00 /kilo

DAVANA OIL

India

Artemisia Pallens

The markets witnessed a good yield in 2017 with a reported figure of 7 MT oil available after harvest. The crop season for 2018 has just begun in March and the harvest is near completion. Though stakeholders have adopted a wait-and-watch approach, it is strongly recommended that customers review their annual needs so that the oil can be sourced well in advance. Prices are at a low; it is a good time to buy.

■ USD 480.00 /kilo



JASMINE SAMBAC

India

Jasminum sambac

2017 saw an increase in production by 10%. High domestic demand for flowers fuelled a parallel rise in prices. 2018 opened on subdued sentiments in anticipation of higher prices and low stock at origin; but as the crop harvest begins in April, markets are expected to ease out.

L USD 3,100.00 /kilo



LEMONGRASS OIL

India

Cymbopogon flexuosus

2017 saw a balanced market with no shortage in supply. 2018 started on a note of expected price rises as supplies continued to remain weak. In a repeat of the last decade, the situation for lemongrass remains stagnant, except for the occasional spikes in volumes that cannot be covered without planning six to nine months in advance. This is mainly due to scarcity of litsea cubeba oil, which is used to make natural citral. Stakeholders are hesitant to give clarity on the dynamics of the market in the coming months but arrangements are being made to boost stock volume to cater to a growing customer base.

■ USD 35.00 /kilo



PALMAROSA OIL

India

Cymbopogon winterianus

Excessive rains yielded a poor crop in 2017. Naturally 2018 brought in a testing time since supply was short and there was no carryover stock. This is another oil that is tough to obtain since existing supplies are completely sold out. There has been no rain in south India so no new oil is available or is anticipated in the foreseeable future.

■ USD 75.00 /kilo

BLACK PEPPER OIL

India

Piper nigrum L.

The new season for the crop began in January with equilibrium in supply and pricing. Prices are expected to remain stable at current levels.

▲ USD 60.00 /kilo



SPEARMINT OIL

India

Mentha spicata

The production of Indian spearmint oil this year is expected to be approximately 80-90 MT. Distillation will commence from the second week of May 2018.

▲ USD 48.00 /kilo



PEPPERMINT OIL

India

Mentha piperita

In an unprecedented high, the Indian price for *Mentha piperita* oil surpassed the North American oil rates. The reasons behind this are the emergent demand for Indian oil. The inventory of *Mentha piperita* oil before the start of crop harvest is very poor. Certain quantities are being held up by the farmers themselves in anticipation of a price rise.

However, these reasons are neither good nor sustainable to determine price. The Indian harvest is in June/July, and monitoring the weather is a critical factor for yields and overall volumes.

▲ USD 46.00 /kilo



SUSTAINING RAINFORESTS WITH NATURAL AROMAS

Melaleuca cajuputi

The cajeput oil market is predicted to slow down and industry challenges continue due to adverse weather conditions. However, quality of raw material remains stable in the current market. Demand is expected to rise owing to the problem of reduced supply of eucalyptus oil. The local pharmaceutical industry players like Eagle Pharma have booked large quantities down at the source, therefore affecting the general availability for all others.

■ USD 28.00 /kilo

Eugenia caryophyllate

Indonesian producers are unable to forecast for clove oil. Production has declined due to adverse weather patterns. This has resulted in a dearth of fresh clove and prices have broken all barriers. For clove, yields are lower and it is difficult to harvest. Clove oil prices will continue to rise and there is a wide variation of qualities available in the market. The harvest is projected to be lower as compared to last year's crop. Demand is increasing, but market conditions are unclear. The crop is expected to be problematic. That said, clove is a fast growing crop and a change in weather can always reverse these extremes in a matter of a few months. Now is a good time to replenish stocks, or else it is a long wait till mid-year and hope for a change in the situation.

Cananga odorata

In 2017 there was excessive rainfall that badly affected the harvest. As a result, supplies were reduced and this trend continues. The market is immune to this new price level, and in general has accepted it, ensuring basic price stability. It is recommended that those with a secure consumption of oil book their requirements soon. The quality of raw material continues to be of concern as it lacks consistency. Some caution needs to be applied when evaluating any seemingly inexpensive offers.

■ USD 135.00 /kilo

Cymbopogon winteranus

There is a sudden high demand for citronella oil and supplies continue to remain limited due to reduced global supply from China and other surrounding regions. With an upsurge in demand from outer regions the percentage of exports from Indonesia is on the rise, thus keeping the domestic demand at peak. Local prices have increased almost 10% over the last month. Rates are estimated to rise further; and it is recommended that buyers cover their bases.

■ USD 32.00 /kilo

GINGER OIL FRESH

Zingiber officinale

② Indonesia

2018 opened with an upsurge in demand during the first quarter, but nothing that should have made such a big impact. Ginger prices have seen a slow but steady upward path for the past few weeks, and these levels are expected to hold for the foreseeable future.

■ USD 125.00 /kilo

MACE OIL ② Indonesia

Myristica fragrans

There is certainly a knock on effect from the current situation impacting the supply and pricing of nutmeg oil. But it is less damaging for mace as the market is smaller and can withstand some shortterm disruptions in supply. Van Aroma continues to maintain stable prices with available stocks. Most suppliers prefer to distill the nutmeg and mace together instead of separating them because there are not many buyers who look for just mace oil.

■ USD 85.00 /kilo



Pogostemon cablin

Sulawesi: Sporadic rains recurring in unpredictable instances have affected the drying and farm level distillation of Sulawasi patchouli, keeping the prices firm. Some patchouli oil producing areas in Central and South East Sulawesi experienced damaging floods last month. They are now in a recovery state, and are on track to produce more oils in the coming months. Prices remain firm owing to a healthier demand. No downward trend is foreseen for the next 8 to 9 months at least. Wise counsel would prevail if buyers with requirements uphold the current prices as these are considered sustainable and viable rates for all players in the supply chain.

LSD 38.00 - 42.00 /kilo

Sumatra: The market is unwavering in terms of no new demand for patchouli from Sumatra. Consequently, supply sources and prices also remain constant. There are some farmers who are converting their lands to maize and citronella due to the irregular business they have seen with patchouli in the region.



MASSOIA BARK OIL

Indonesia

Cryptocaria massoia

Market conditions for massoia bark oil are strong, with consistent demand and competitive prices. New producers are expected to make their debut in the market, backed by newer and more efficient technologies that will result in a better product. Overall, 2018 is going to be an interesting year for massoia bark oil.

L USD 300.00 - 700.00 /kilo

NUTMEG OIL

Indonesia

Myristica fragrans Houtt.

The nutmeg oil market is precariously balanced and predicted to remain so with reasonable supplies at the moment. However, the prevailing wet weather conditions have farmers stressed, and many have decided to restrict planting until prices return to consistently higher levels. The emergence of bulk buyers and back orders in the supply chain resulted in depleted stocks in the local market but is keeping prices firm. Not too many changes are foretold in the next few months, though prices could tighten further.

■ USD 75.00 /kilo

VETIVER OIL

Indonesia

Vetiveria zizanioides

Currently, demand for vetiver continues to be high and the supply is stretched thin. This has put pressure on oil production. In order to lessen distillation time, producers started heating the oil during the distillation process. The ultimate outcome led to burning of the oil. This affected the colour and the odour, which remained unacceptable for many end-users. The system of tutoring continues to take place alongside longer-term investments; however the situation is likely to remain critical for some time.

■ USD 500.00 /kilo



Citrus bergamia

Prices for this crop are currently at a record-breaking high and continue on its meteoric rise. Fruits which were generally used only for processing purposes are now sold to the fresh fruit market. As a result, raw material is scarce for oil processing. Oil prices have broken all previous barriers.

▲ Euro 250.00 /kilo



Citrus limon L. Burm. F.

After Spain, Italy is the second largest EU producer of lemon. Sicily is the main lemon producing area, accounting for 86% of domestic production. The leading lemon varieties grown in the country are *Femminello Siracusano*, *Lunario*, *Interdonato*, *Limone di Sorrento*, and *Limone di Procida*are. Italy's lemon production is mostly destined for the fresh market. The 2017/18 production is forecast to remain flat. The market is in the grip of a tense situation as the soaring fruit prices have put many processors into financial difficulties. There was a decline in production due to last summer's drought. This has not helped ease prices, which hover at a steady high, despite extra efforts to compensate the low volume processed in the previous period.

Euro 36.00 /kilo



Citrus sinensis

Italy is the second largest European orange producer. Sicily and Calabria are its main orange-producing areas, and account for 59% and 22% of total production respectively. The top orange varieties produced in the country are Tarocco, Moro, Sanguinello, and Navelineare. The major growing region was affected first by drought and then heavy rains. Even now there are reports of lack of rainfall, leading to slower than expected production. The current season is one of the better ones in recent years. There is availability of sufficient crop at reasonable prices. Though the orange fruit is small, the quality of the juice and the oil is reported to be up to the mark.





Citrus reticulata

Sicilian producers reported a smaller crop in 2018 and also confirmed availability of green mandarin oil from different origins. But this was overshadowed by the restricted supply of top quality red mandarin oil. The new crop is harvested with the production of yellow and green mandarin oil. Prices continue to remain stable as there is an ongoing production of red mandarin oil.

Euro 70.00 - 90.00 /kilo

CLOVE LEAF OIL

Madagascar

Syzygium aromaticum

Production is running normally now, but demand is very high. Prices increase from one sale to the next. Prices are likely to increase further until June/July when producers stop distilling to switch to coffee and vanilla.

L USD 24.00 - 27.00 /kilo



ORANGE OIL

Mexico

Citrus sinensis

56% of Mexico's citrus production is Oranges. Since there is no official source in the country to proclaim this figure, it is an estimate. 80% of all Mexican citrus production is grown in the eastern region. Other than the Mexican key limes, as they grow on the west coast mostly.

Year on year, the Orange crop varies from processing to fresh. It is influenced, to a large degree, by the crop size, the occasion for processors to access the fruit, and the futures trading prices. Over the past five years, trends show that, on average, 55% to 60% of the orange crop was processed. The majority of Mexican growers are small. As a result, the land and the groves are not tended to in a professional manner, which actually has the benefit of making the plants truly organic in nature.

■ USD 9.00 /kilo

Citrus aurantifolia

May and ends in September.

Mexico's vital production area for Key Limes is along its Pacific Coast in the states of Colima and Michoacan. Although Key Lime production takes place throughout the year, a major portion of the limes is produced during the winter months from December to February. In Michoacan and Colima, the season usually starts around

Key Lime production of 2017/2018, from both Colima and Michoacan, is expected to be better than the last crop. About 30% of the total production from these two regions goes towards processing. The supply for lime oil is adequate; however lime oil type A supplies are rather limited. With average demand and an excellent supply of stock, lime oil prices are at an equilibrium.

L USD 38.00 - 50.00 /kilo

GRAPEFRUIT OIL

Mexico

Citrus paradisi

Mexico boasts of a substantial grapefruit crop. In the wake of the problemaffected Florida crop, Mexico has now gained market share. The Mexican season kicks off in August and continues until November. According to industry estimates, Mexico is destined for processing around 20% of the total grapefruit production. For the current 2017/2018 crop, the processing figures are pegged at around 87,000 MT, which is marginally lower than last season's figures.

■ USD 105.00 / kilo (White) Lambda USD 95.00 / kilo (Pink/Red)

MEXICO - USDA ESTIMATED LEMON/LIME PRODUCTION (MT)

X1000 MT	2013/14				Forecast 2017/18
Production	2,187	2,326	2,416	2,500	2,580
Imports	3	1	3	3	3
Total Supply	2,190	2,327	2,419	2,503	2,583
Export	519	610	662	740	770
Fresh Fruit Consumption	1,332	1,383	1,385	1,377	1,414
For Processing	339	374	367	336	399



Ocimum basilicum L

There was no carryover of stock into this season, which will start next August. The floods throughout the Terai Plain adversely impacted yields and with growing demand, and a forecast of supply getting tighter, prices may rise later in the year.

■ USD 15.00 /kilo

MANUKA OIL • New Zealand

Leptospermum scoparium

With the emergence of new applications and aromatherapy brands in the market, demand for manuka oil shows a significant increase. There is pressure on the supply chain as surplus stock, which has been accumulated to support growth, has been scrapped in recent months. Demand is expected to go up as soon as the success of other brands and new products is realised and copied by others. Despite a few minor supply delays, activities in New Zealand should help support this growth long term.

MZD 750.00 /kilo

GUAIACWOOD OIL

Paraguay

Bulnesia Sarmientoi

The first few months of 2018 have shown good availability. However the newly implemented CITES regulations have given rise to additional regulations being imposed on the exports of this oil. If this reduces the availability of exports then there will certainly be a surge in prices for Guaiacwood oil at some point in the first semester of 2018.

■ USD 30.00 /kilo

LIME OIL Peru

Citrus aurantifolia

Peru faced several obstacles in the form of drought and flooding during an El Niño disturbance. This also affected the Piura region, Peru's largest lime-producing region, contributing 57% of the country's production. The new season started in January 2018. Adverse weather has once again shaken up crop production, leading to sliding production figures.

■ USD 38.00 /kilo

BLUE CHAMOMILE OIL

Matricaria chamomilla L.

The crop is harvested between February and March. Despite the less than ideal weather conditions, the 2017 crop was slightly above average at around 100 kg. Currently, local supplies are limited but market conditions remain strong with consistent demand.

Nepal

▲ USD 850.00 /kilo



Citrus aurantium ssp.

Last year witnessed supply problems during the off-season. This year, there is no foreseeable decline estimated in the imminent months although the weather continues to hamper supply. Production is expected to fall in the coming months, which is normal, since the main crop will resume in October. This difficult-to-find essential oil is best obtained by meticulous planning, at least six months ahead of actual requirement. The reason being that although availability is better at the moment, it is not easily procured, and transit times are often measured in months, not weeks.

▲ USD 59.00 /kilo



ARTEMISIA TAURICA OIL

Artemisia taurica 🔞 Russia

In 2017, the unusually hot weather locally stressed the trees and affected their size, and consequently final production. As a result of the heat plants were destroyed, with very little oil produced, just one third of an average year. In 2018 the new season is expected to commence in content, the material represents one of the higher than other origins and usually

CORIANDER SEED OIL

2017 saw an excess supply of stock throughout the year. As a result, farmers and collectors offloaded stocks at ridiculously rock-bottom prices. The sufficient carryover and low prices over the last two years prompted farmers to reduce distilling quantities of this oil. It is anticipated that prices may go up this year, at prevailing crop prices.

△ USD 55.00 /kilo

CLARY SAGE OIL

July 2017 marked the end of the clary sage oil harvest. It showed positive results with more oil produced, when compared with previous years. Currently the market is active, as global demand has gone up considerably; and plans are in the offing to increase the plantation acreage. With buyers preferring Russian quality to its French and Chinese counterparts, the 2017 season ended with no material left at origin. Assuming another good crop in the summer of 2018, there should be ample availability



DILL WEED OIL

Anethum graveolens L. Russia (

The 2018 new crop season is expected to start in July/August subject to weather conditions. There are some quantities available to satisfy urgent demand. However, subject to production in summer 2018, it is anticipated prices may remain stable with good crop availability in the near future. The 2017 crop was not as good as the 2016 crop due to changing satisfactory production kept prices stable. However, prices will fluctuate with this demand vs. supply issue in the coming months, as the new crop comes in.

■ USD 60.00 /kilo

FIR NEEDLE OIL

The harvest season for the new crop is expected in April/May 2018. Last year witnessed the slow movement of supplies with the lingering of the Siberian winter. However, with the weather changing increased in summer and ensured the availability of reasonable material. Currently there is decent availability of for the past two years, but our major producers expect high prices from this

■ USD 30.00 /kilo

SAGE OIL

Sage offcinalis Russia

JUNIPER BERRY OIL

Juniperus communis 🔞 Russia

2017 witnessed an overall increase in juniper berry oil production, although demand is anticipated to slow down in the near future. Currently, backed by a healthy demand, price and availability

MA NA

LAVENDER OIL

Lavandula angustifolia

Russia

The market witnessed a healthy demand,

■ USD 105.00 /kilo



EUCALYPTUS CITRIODORA OIL

In 2017, the crop season began in June and extended up to October. Better managed farms, complemented by sustainable planting produced a healthy yield. Going by present conditions, production is shaping up well. However, at the start of 2018, all of it was already committed to buyers who have pre-booked their requirements. More clarity can be given on the new crop in June. South Africa has become more active in this essential oil, and is well positioned to compete in the global arena against China.

■ USD 24.00 /kilo

TAGETES OIL

Tagetes erecta South Africa

2017 saw a robust season for tagetes oil. The new production season has just begun, and production is in full swing. Judging by the weather situation with sufficient rain and cold weather, 2018 is expected to bring in some robust figures. The market is balanced on an even keel now, with price and supply at equilibrium. More updates are expected at a later date.

■ USD 180.00 /kilo

TEA TREE OIL

Melaleuca alternifolia South Africa

The season for tea tree oil in South Africa runs from April to October; fresh estimates start filtering in by the end of February. Production has started but quantities are limited at this stage. In the case of organic tea tree oil, the demand is healthy, and it is expected to remain so for 2018. The crop in 2017 was sold immediately after production.

■ USD 48.00 /kilo

GRAPEFRUIT OIL

Citrus paradisi South Africa

The side effect of the 2016 drought still prevails as the trees recover slowly. The European Union and Russia remain the major markets. With improved rainfall in 2017, better results were there in fresh fruit, though oil yields went down by 35%.

▲ USD 90.00 - 100.00 /kilo

ORANGE OIL

Last year there was a lingering effect of the drought of the previous year. It took considerable time for the trees to gradually recover and bear fruit. The European Union and Russia remain the major markets for South African oranges. The production of oranges for the 2017/2018 crop is expected to increase by 2% to 1.43 million MT as compared to the last crop. An estimated 13% of the crop will go to the processing industry.

■ USD 9.00 /kilo





CYPRESS OIL

Spain

Cupressus sempervirens L.

Demand is soaring especially in the aromatherapy sector, leading to persistent pressure on oil production. Price is predicted to take an upward trend in coming months.

L Euro 120.00 /kilo



LAVANDIN GROSSO OIL

An acute shortage continues to prevail

since French producers have nil stocks,

global market. In addition, there are two

major hurdles, namely obtaining quality

samples analysed this season have been

leading to insufficient supply in the

approval is difficult since almost all

adulterated; secondly, it is difficult to obtain firm offers for any volumes.

Lavandula hybrida

Euro 28.00 /kilo

Spain

LAVANDIN SUPER OIL

Spain

Lavandula hybrida

The market is stable, with some stocks available at origin. Due to the poor lavender season, demand is expected to be marginally higher than that of last year's crop. Prices are expected to remain steady in the coming months.

L Euro 45.00 /kilo



Rosmarinus officinalis

The oil samples currently in the market are obtained from wild harvesting; and the first batches of distillation are underway. At present the market seems calm though availability is low, but the news from local farmers seems to be positive.

L Euro 65.00 /kilo



Thymus zygis L.

With the crop season coming up shortly in June, there is a chance for market demand to rise to some extent. Farmers are confident of a good production year due to the quantity of water retained in the soil during the winter. Prices are estimated to remain stable.

L Euro 150.00 /kilo

ORANGE OIL VALENCIA

Spain

Citrus sinensis

Valenica, Andalusia, and Murcia continue to remain major orange producing regions in Spain. The leading orange varieties grown in Spain are Naveline, Navel, Navelate, Salustiane, Valenica, and Sanguinello. The past few years have witnessed a gradual contraction of the Spanish orange industry. Despite the fact that Valenica oranges are better suited to oil processing, the returns have been meagre. This has prompted many Valencian growers to give up orange groves in favour of other profitable crops. Spanish oranges are rich in aldehyde, odour, and colour; there has been excessive rainfall and production came under undue pressure. As soon as Brazilian producers start to decrease prices it can pose a problem for Spanish producers. The availability of fresh fruit declined considerably. Oils in the market are mostly carryover and prices are temporarily stable.

Euro 9.00 /kilo



Citrus limon L. Burm. F.

For quality lemon oil, the link between fresh sales and processing holds the key. In the fresh fruit market, Spanish lemons are very popular for their distinctive juiciness and quality. Spain holds the number one lemon producing position in the European Union. In addition, it is the second largest processor globally, after Argentina. As such the nation continues to have a great influence on market dynamics. As Spanish farmers focus efforts to produce high quality lemons, the oil industry enjoys the advantage of processing superior quality fruit; and absorbs around 25% of the total crop production. Spain does not produce for processing, and the primary focus is the fresh fruit market. Considering that good quality fruit naturally translates into superior grade cold pressed oil, this gap has been smartly converted into a strong asset.

Spain is the only country engaged in the production of two lemon varieties, Fino lemon in winter and the Verna lemon variety in summer. Consequently, Spain enjoys an edge over other origins – it offers quality lemon oil from fruit produced throughout the year. However, there is trepidation that the crop may dwindle by 2.8% due to a decline in the production of these two lemon varieties as compared to previous years. On the other hand, there has been the emergence of new plantations of Fino lemon and hopes are riding on a production increase estimated at 12%. The Verna lemon forecast, meanwhile, is down by 40% as flowering in May and June got badly affected due to high temperatures.

With regard to quality and quantity, the Spanish sector should continue to establish its leadership position in the European fresh market. While its produce maintains second place in the worldwide processing activity.

Euro 34.00 /kilo

EUROPEAN UNION - USDA ESTIMATED LEMON/LIME PRODUCTION (MT)

Countries	MY 2014/15	MY 2015/16	MY 2016/17	Forecast MY 2017/18
Spain	1,086,000	775,800	995,900	967,900
Italy	429,000	456,000	448,000	447,650
Greece	55,700	68,500	69,083	75,000
Portugal	13,000	16,000	16,000	16,000
Cyprus	11,000	15,000	8,000	8,000
Total Production	1,594,700	1,331,300	1,536,983	1,514,550

CINNAMON BARK OIL Sri Lanka

Cinnamomum Zeylanicum

The market remains unremitting with strong demand and limited raw materials, eventually resulting in price pressures. The cinnamon bark oil season starts in mid-June. Today, demand continues to be high and supply is tight. The maximum amount of material in stock has been released, but the increasing demand is still pushing prices upward. Current conditions indicate that there will be no change in the situation in the foreseeable future.

L USD 350.00 /kilo

CINNAMON LEAF OIL Sri Lanka

Cinnamomum zeylanicum Nees C.

In Sri Lanka, the season of harvest for cinnamon is between May and November. Cinnamon leaf oil comes from Cinnamon verum (also called Laurus cinnamomum) from the Laurel (Lauraceae) plant family. It is native to Sri Lanka, but also grows in many countries such as India, China and Indonesia. As the area suffered from a major drought, inventories of oil are very low and even collection has declined. Prices of cinnamon leaf oil are fluctuating in part due to the devaluation of the Sri Lankan rupee. The next big quantities of the new crop will be available in July/August and it might be a good moment to fill annual requirements.

■ USD 25.00 /kilo





Sri Lanka (formerly Ceylon), "Pearl of the Indian Ocean", is an island at the southern tip of India with a population of 21 million. It has a diverse environment, magnificent cultures and scenery, and a history stretching back thousands of years. The island's central mountainous area flattens down to the sea, and has diverse climatic zones facilitating production of many aromatic plants, some of which are further processed into essential oils and oleoresins. The principal spices are cinnamon and citronella in the southern coastal belt; pepper, cloves, nutmeg and cardamom in the central hills, especially around Kandy and Matale. Small amounts of ginger, patchouli, vanilla and sandalwood are grown, but processing sandalwood is currently illegal.



Spices and essential oils is an important sector in Sri Lanka. After tea, the sector generates the largest agricultural foreign exchange earnings and in excess of 90,000 hectares (ha) of the wet zone is under spices.



Photos from left to right 1. Cinnamon plantation 2. Cinnamon – removing leaves 3. Cinnamon leaves 4. Cinnamon leaf bundle 5. Cinnamon leaf distillery 6. Cinnamon peeler

CINNAMON

Cinnamon, along with pepper, is the dominant spice crop and the only spice grown in Sri Lanka as a mono-crop in the southwest region. Growers range from smallholders with 1 ha or less to plantations up to 200 ha. Smallholders own most of the cinnamon cultivated land, with an estimated 80% grown on land below 1 ha. An estimated 250,000 cinnamon cultivators and 400,000 cinnamon sector employees and 60,000 family units are directly dependent on the cinnamon industry as their main income source (*C. Perera IFEAT Conference 2015*). In terms of farmers' agricultural returns, cinnamon ranks second in importance to tea. The area under cinnamon has been increasing, totalling an estimated 32,682 ha in 2016 (see Table). In recent years there has been a growth in organic cinnamon production by both plantations and smallholders covering approximately 1,200 ha of certified organic land.

A range of commercial products is obtained from cinnamon including quills, chips, featherings, leaf oil, bark oil and root oil. The bark yields oil with high cinnamic aldehyde content, while the leaf consists of eugenol and the root has a high percentage of camphor. There are two kinds of cinnamon: Ceylon (or Sri Lankan) cinnamon (*Cinnamomum zeylanicum* and *Cinnamomum verum*) and cassia cinnamon (*Cinnamomum cassia Blume (Lauraceae*) primarily from China and Indonesia. The Ceylon variety is referred to as the "true" or "real" one; but in reality both are from the same family. Nevertheless, compared with cassia, Ceylon cinnamon contains far lower amounts of naturally occurring coumarin, which can pose toxicity risks. Also, as a medicinal herb, Ceylon cinnamon is better researched, especially in its extract form, than cassia. For example, researchers know more about the anti-bacterial properties of Ceylon cinnamon.

Harvesting begins around 3 years old and the economic lifespan is 30-40 years. The bark is harvested twice a year, immediately after the two rainy seasons, when the rain-soaked bark is more easily stripped from the trees. Yields vary considerably but with ideal climatic and soil conditions, it is possible to obtain 450 – 500 kg of cinnamon and 10,000 kg of cinnamon leaves per hectare. The fresh stems are peeled – using a labour intensive process – to obtain the inner bark. This peeled inner bark, known as quills, is an important export item and the main market outlet is Central and South America, particularly Mexico. Broken pieces obtained from this operation are known as quillings. Cinnamon production and spice exports have been on a rising trend in recent years with exports in 2017 totalling an estimated 16,617 MT, approximately 4,000 MT below overall annual production (see Table).

The cinnamon industry faces a number of challenges including a shortage of trained peelers, rising labour costs, growing competition for land use and alternative economic and employment opportunities.

CINNAMON BARK OIL

(CINNAMOMUM ZEYLANICUM)

Bark oil is usually distilled from quillings, because of their lower cost. About 10-12 distillers, both small distillation operations located in the growing areas, and large companies using modern equipment, carry out distillation. Traditionally the oil was extracted using hydro distillation and copper stills were used but these have now been replaced by stainless steel stills using steam distillation and supercritical fluid extraction.

Competition exists for raw materials between bark oil distillers and cinnamon exporters. Higher cinnamon prices have encouraged harvesting more than once a year and this has affected both quality and yields. Yields are now rarely above 0.7% compared with over 1% previously with cinnamic aldehyde content of over 65%. Bark oil prices largely depend on the raw material used in distillation; fresh cinnamon quills produce better quality oil. While cinnamon bark oil contains 90 major components and 50 unidentified components, quality is measured by the oil's cinnamic aldehyde content (i.e. graded 40%, 50%, 60% and 70%). The higher the content, the better the quality and the higher the price. Age, soil, climatic conditions and location can affect quality.

The oil has a characteristic powerful spicy, tenacious cinnamon odour, and a yellowish or brownish colour that darkens when exposed to air. Its main uses are in food flavouring, beverages, perfumes, cosmetics, and pharmaceutical preparations.

Exports of bark oil from 2014 to 2017 show an upward trend reaching 47 MT in 2017. Most cinnamon bark oil is exported directly by 3 or 4 of the large distillers or by commodity exporters, who purchase from small-scale distillers. The off-season for cinnamon is from January to April, and this, combined with the dry weather during the first quarter of 2018, has reduced raw material availability, putting upward pressure on prices. The limited availability of oil until at least late May will ensure that prices remain firm.

CINNAMON LEAF OIL

(CINNAMOMUM ZEYLANICUM NEES C.)

Cinnamon leaf oil is a by-product from processing cinnamon bark into quills. After harvesting the bark, the leaves, twigs and tender stems are trimmed and left in the field. After wilting for 3-4 days, the leaves are collected in 40 kg bundles and transported to the field stills for steam distillation. One hectare yields approximately 7 MT of raw material and each distillation uses approximately 350 kg of material. Distillation takes 6-7 hours and the yield is approximately 1% and is carried out solely by small operations within the growing area. There are about 200 small distillers who use field stills ranging from comparatively primitive to conventional types and sell their oil either to larger distillers or commodity exporters. The best oil yields are usually obtained during July and September. Oil is graded according to eugenol content and Sri Lankan leaf oil specifies a maximum of 75-80% eugenol with a maximum of 5% cinnamic aldehyde. Distillation methods, soil and climatic conditions mean that eugenol content can vary between locations. ISO standards exist for leaf oil but not for bark oil.

Cinnamon leaf oil production and exports are considerably greater than bark oil production and exports. Moreover, leaf oil production and exports are showing an upward trend despite annual fluctuations. In the early 2000s, exports fluctuated between 120-180 MT while during the last four years annual exports have averaged 262 MT with a peak of 309 MT in 2017 (see Table). As with bark oil, the limited availability of raw materials is affecting leaf oil prices and availability. In early 2018 leaf oil was trading locally at lower prices, but recently has risen quite sharply. Anticipating higher prices, distillers are reported to be holding onto stocks in anticipation of continued upward price pressure.



Photos
1. Citronella plant
2. Citronella still



CITRONELLA OIL (CYMBOPOGON NARDUS)

Ceylon citronella has grown in Sri Lanka for centuries usually on unfertile soil in the coastal regions. It is now the only crop in Sri Lanka grown specifically for essential oil production. It differs in both composition and organoleptic properties from Java type citronella oil (*Cymbopogon winterianus*):

	-	Ceylon Citronella	Java Type Citronella
Citronellal		7-15%	35% min.
Total alcohols (expressed as geraniol)		55-65%	85%

A number of small producers and one large producer grow citronella in the southern regions, on approximately 1,300 ha. There are 2 to 3 harvests per year, and the citronella grass is sun-dried for about 3 days after harvesting prior to distillation. Distillation is undertaken in conventional field stills and yields average 0.7%, being higher in the dry season and lower in the rainy season.

Annually Sri Lanka used to export several hundred MT of citronella oil but production has declined almost consistently over the past few decades, in part because of higher production costs and prices compared with Indonesia. Annual exports fell below 10 MT in recent years but there was a substantial growth in 2017 to reach 38 MT (see Table). Some oil is consumed domestically in the soap industry.

The recent very dry weather has had a major impact on the availability of grasses for distillation. Also lower Indonesian prices have limited demand for Sri Lankan citronella oil in recent years. Because of Indonesian competition the prospects for future growth of Sri Lankan citronella oil are not good and demand is restricted to niche markets that can support substantially higher prices. Oil prices in the local market have remained stable and are not expected to vary significantly.





Photos 1. Cardamom picking 2. Cardamom sorting

CARDAMOM OIL

Cardamom production has declined sharply over the last 40 years and cardamom for distillation is limited due to high local spice consumption and Middle East exports. Cardamom is cultivated as a mono-crop under forest shade in the central hills among the tea estates on an estimated 1,200 ha. The main season is October to December but small quantities are harvested throughout the year. Production from the field to the cured pod is very labour-intensive and demands skill. Cardamom oil is produced on a small scale and is undertaken at distilleries in the Colombo region. Exports are under 1 MT and there is little prospect of developing significant export production levels in the short to medium term.

CLOVE BUD OIL

Annual clove production and exports show wide annual fluctuations, mainly because a good crop is harvested in alternate years (see Table). There are approximately 7,000 ha. of clove and production largely arises from home gardens and mixed gardens in the central hills; the scale is much smaller than Indonesia or Zanzibar. Clove harvesting is a labour intensive and expensive operation and if the price falls too low then farmers will not harvest. Clove production in 2017 was not significant and a better harvest is expected for late 2018. Current availability of raw material is on the decline and farmers are holding on to stocks in expectation of better prices.

Essential oil production is limited to clove bud and clove stem oils distilled in the Colombo region. Clove leaf oil production is not feasible with the highly dispersed, low intensity cultivation of clove trees. Both clove spice and clove bud oil have shown wide annual fluctuations in recent years with annual clove bud oil exports below 10 MT (see Table). Prices of clove bud oil can be expected to rise from current trading prices. Similarly, clove stem oil prices can be expected to stay firm or rise further because of limited raw material availability due to the lower 2017 crop, combined with farmers holding on to stem stock in anticipation of price rises.



Photo Cloves: dried and freshly picked buds

Product	2014	2015	2016
Cinnamon	17,600	17,707	18,945
Cloves (with stem)	3,225	5,253	1,823
Nutmeg and Mace	2,960	2,750	4,155
Pepper	18,600	27,233	18,476

SRI LANKA: ESTIMATED PRODUCTION OF SOME EXPORT CROPS (MT)

SRI LANKA: ESTIMATED AREA OF SOME EXPORT CROPS (HECTARES)

Product	2014	2015	2016
Cardamom	2,801	2,801	1,242
Cinnamon	31,867	32,342	32,682
Citronella	1,177	1,194	1,352
Cloves	7,627	7,643	6,842
Nutmeg	1,013	1,022	1,029
Pepper	32,291	32,527	39,515

SRI LANKA: ESSENTIAL OIL EXPORTS (MT)

Product	2014	2015	2016	2017
Cardamom oil	1	1	0.7	-
Citronella oil	10	8	8	38
Cinnamon leaf oil	248	265	226	309
Cinnamon bark oil	17	14	27	47
Clove bud oil	2	10	6	9
Nutmeg oil	30	68	122	65
Black pepper oil	26	61	43	49

SRI LANKA: SPICE EXPORTS (MT)

Product	2015	2016	2017
Cinnamon	13,549	14,693	16,617
Clove	5,519	1,843	7,806
Nutmeg and mace	1,889	1,705	2,043
Black pepper	16,657	7,876	13,309

Source: Sri Lanka Customs and Export Development Board

NUTMEG AND MACE OIL

Although not a native plant, nutmeg grows well in Sri Lanka and nutmeg oil is the largest essential oil export after cinnamon (see Table). Nutmeg trees are grown mainly in home gardens, along with pepper, cloves or coconut, in the central wet zone districts around Kandy and Matale, on an estimated 1,000 ha. Production is very small compared with Indonesia. A substantial proportion of production is exported either as spice or essential oil. Sri Lankan oil differs in composition from Indonesian oil in possessing a lower myristicin (3-4%) and higher sabinene content.

NUTMEG OIL: COMPARATIVE GC CHARACTERISTICS BY ORIGIN (% COMPOSITION)

Constituent	Indonesia (East Indian)	Sri Lanka	Grenada (West Indian)
α-pinene	18-21	15-17	7.8-12
β-pinene	9-14	10.5-11.5	8-12
sabinene	27-30	40-44	43-51
safrole	1.5-2.5	1.0-1.1	0.1-0.2
elemicin	0.5-1.0	1.5-2.0	1.3-1.4
myristicin	9-13.5	3-4	0.5-1.0

Annual nutmeg spice exports have been relatively stable, but oil exports have shown wide annual variations ranging from 30 MT in 2014 to 122 MT in 2016, with an annual average of 71 MT over the past 4 years. Nutmeg and mace are jointly produced products but it is thought no mace oil is produced. Nutmeg harvesting will begin later this year, and currently no crop is available for distillation. Because of the dry conditions a smaller crop is predicted. Meanwhile, wet weather conditions in Indonesia have reduced raw material availability and it is expected that oil prices will remain firm and possibly tighten further.

Photos 1. Nutmeg and mace 2. Nutmeg sorting









Photos 1. Pepper vine 2. Pepper harvesting

BLACK PEPPER OIL

Sri Lanka is a sizeable and growing producer of pepper, estimates suggesting output in 2017 of around 25,000 MT from almost 40,000 ha. Production is a mainly family activity in home and spice gardens in the central hills. The vines are grown on living trees and the shaded, low input cultivation of unselected cultivars, leads to lower yields compared with intensive high input plantation systems in other major producing countries. Nevertheless, efforts are being made to develop contract farming whereby growers are guaranteed a fair price in return for delivering an environmentally responsible and sustainable product.

The crop has a high proportion of light berries (about 5,000 MT in 2017), very rich in oil and piperine. For this reason Sri Lankan pepper has always been favoured for distillation and oleoresin extraction. Also the oil has a distinct odour coveted by the perfume industry. Oil distillation and oleoresin extraction is undertaken in the Colombo region by modern factories. Several companies distil black pepper oil, some of which is organically certified. In 2017 some 49 MT of black pepper oil was exported alongside 13,309 MT of pepper. The main importer of light berries is the oleoresin industry in India. In March India unilaterally imposed minimum prices on Sri Lankan pepper arguing that cheap Vietnam pepper was shipped to India via Sri Lanka under the Indo-Lanka Free Trade Agreement.

OLEORESINS AND MEDICINAL PLANTS

Spice oleoresins are concentrated forms of the spice, using solvent extraction processes. The oleoresin closely matches the full flavour profile of the spice, in contrast to the essential oil, which only delivers a part of the profile. Spice oleoresin use and trade has greatly expanded over the last few decades, particularly in the food industry, in part because the strength and other quality factors can be standardised and controlled. Moreover, handling and transport is more cost effective since the oleoresin yield is typically 10–15% of the whole spice weight.

Over a decade ago, Sri Lanka started oleoresin production for export, initially for western markets where food industry processing was centred. The major oleoresin product was pepper, partly because of Sri Lankan pepper's high piperine level. However, Sri Lanka has been unable to compete with neighbouring India. Kochi in Kerala, some 500 km north of Colombo, dominates world oleoresin production. Sri Lanka's competitive disadvantage arises because of India's substantial economies of scale relating to bulk extraction facilities, alongside the ability to extract several large volume spice crops, including pepper, capsicums, turmeric and ginger. India has substantial domestic spice production and imports sizeable volumes of spices for further processing, including Sri Lankan pepper. Also India has a strong technical base. Sri Lanka is trying to create a competitive advantage by developing production of more specialist products – the further fractionation of the crude oleoresin, production of organic oleoresins for the organic food sector – but this is a relatively small niche sector.

And finally - an estimated 1,500 medicinal plants are used in Sri Lanka, mainly in traditional Ayurvedic medicine, but major new markets are being developed by Sri Lankan companies in the food, beverage, supplement and cosmetic markets using the synergies between essential oils, spices and medicinal plants – but that's another story!

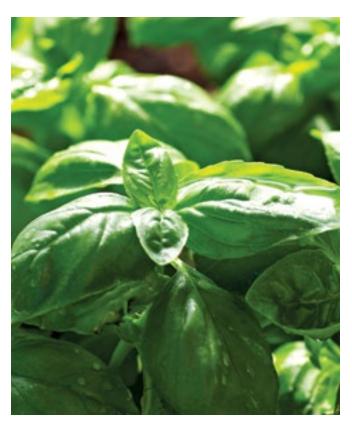


ROSEMARY OIL Tunisia

Rosmarinus officinalis

The new season started last March and ends in early August. New challenges cropped up due to restricted availability of stock over the last few years. Currently, sources reassure us that supplies are improving and moving towards a healthier situation. New arrivals are expected to bring about a price drop in the near future.

■ USD 75.00 /kilo



BASIL OIL *•• Vietnam*

Ocimum basilicum L.

In 2017, the 'Severe Tropical Storm Talas' was an unusually large tropical cyclone that caused damage to the cultivating regions. Due to low availability of stocks in the market, prices have already firmed 30-40% in recent months. 2018 may experience a further increase in prices. Usually production levels reach 25-30 MT, but once final figures are calculated, there is a probability of a 50% reduction.

■ USD 55.00 /kilo

Cinnamomum cassia

Vietnam produces around 700 MT of cassia oil in the Yen Bai, Lao Vai region bordering China. Quang Nam, part of Central Vietnam is also known for some trees. The main harvest period runs from April to June and yields a higher cinnamic aldehyde content of around 85-90%. The second harvest period, from September to November, yields cinnamic aldehyde levels of 75-83%. Currently, there are sufficient stocks available to meet demand.

■ USD 40.00 /kilo



ESSENTIAL ROAD TRIPPIN' THROUGH THE US OF A!





GRAPEFRUIT OIL Q USA

Citrus paradisi

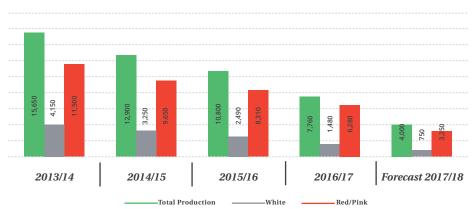
Over the last few years America's citrus industry has been beleaguered by the dreaded greening (HLB) disease that has become the bane of citrus farmers. Among all the citrus varieties, grapefruit tends to be most adversely impacted by greening. the demise of grapefruit has been well documented, with Florida's grapefruit production plunging drastically by 48% this year. The latest Florida predictions point towards a double-digit percentage drop month-on-month. The USDA's May 2018 forecast for all Florida grapefruit production in 2017-18 is lowered yet again to 3.95 million boxes. The white grapefruit forecast is 0.70 million boxes and the red grapefruit forecast is 3.25 million boxes.

In the wake of these circumstances, the supply situation is grim with limited stock. Prices remain firm at their zenith, and are not expected to ease out in the near future. Rather, the market anticipates further escalation in prices; the outcome of this can only be a steady decline in demand.

■ USD 125.00 - 130.00 /kilo (White)

■ USD 115.00 - 120.00 /kilo (Pink/Red)

USA - GRAPEFRUIT PRODUCTION OF FLORIDA ('000 BOXES)





LEMON OIL *③ USA*

Citrus limon (L.) Burm. F.

The USDA May 2018 forecast for 2017-18 lemon production is 21.8 million boxes. This is a marginal decline from the production of previous years. California accounted for 20.5 million boxes and Arizona contributed 1.3 million boxes to the total production.

■ USD 42.00 /kilo

ORANGE OIL Q USA



Citrus sinensis

Florida is the largest orange producing state in the United States, and ranks third in the world behind Brazil and China. In the USDA May 2018 report, Florida's orange production forecast was reduced down further to 44.95 million boxes in 2017/18. What is worrying is the fact that this is Florida's nadir, the lowest orange crop production in more than 75 years. This forecast represents approximately 35% less fruit compared to last season's final production (69.0 million boxes). The total volume is comprised of 18.95 million boxes of early, midseason and navel varieties and 26.0 million boxes of Valencia oranges. Approximately 95% of oranges grown in Florida are processed for juice. Since the discovery of the fatal citrus greening as far back as 2005, the Florida orange crop has plummeted by over 70% from 242 million boxes in the season of 2003-04.

In contrast, California estimates peg annual orange production at a respectable figure of 44.5 million boxes for 2017/18, almost at par with Florida. A significant factor that contributed to this stable production is that California has so far evaded citrus greening disease. Annual Texan orange production has been moderately constant at around 2 million boxes.

Florida's numbers pale in comparison to the new bumper crop forecast from Brazil. The South American nation is now processing a lot more oranges than Florida. Offering 398 million boxes against Florida's 45 million boxes of oranges, Brazil has rewritten history and set a new paradigm. The substantially reduced orange crop will reduce the amount of US orange oil produced. However, the market for this product is now dominated by the positive developments in Brazil's orange output and processing industry.

To conclude, the Florida industry is far from optimistic but nevertheless continues to explore ways of increasing production. The biological phenomenon, alternating bloom, whereby a heavy yield in one year is following by lower yields the next, could be the answer to an increased growth in Florida production in 2019; which in turn could lead to downward pressure on orange oil prices.

■ USD 9.00 /kilo

USA - ESTIMATED ORANGE PRODUCTION

X million of 40.8 kg Boxes	2012/13	2013/14	2014/15	2015/16	2016/17	May Forecast 2017/18
Florida	133.600	104.700	96.950	81.700	68.850	44.950
California	54.500	49.500	48.200	58.500	48.300	44.500
Texas	1.793	1.777	1.452	1.691	1.370	2.110
Total	189.890	155.980	146.600	141.891	118.520	91.560

THE INTERNAL ONENESS YOGA WITH ESSENTIAL OILS

Inputs from Puneet Nanda, Founder of GuruNanda

A few drops of an essential oil paired with restorative yoga leads to deeper awareness of rest in the asana (i.e. posture). We explore some oils most suitable for various asanas to better the result of obtaining inner peace.



YOGA

The literal meaning of the Sanskrit word Yoga is "Yoke." It is a form of deep meditation and practice involving prescribed postures and controlled breathing, thus providing emotional as well as physical benefits. Yoga reduces the feeling of anxiety, stress and depression; and induces the feeling of calmness and balance.

ESSENTIAL OILS

Essential oil is natural oil that possesses the characteristic fragrance of the plant from which it is extracted and promotes spiritual focus. The term essential oil is basically a contraction of the word 'quintessential.' It is in liquid form and derived from the roots, stem, flowers, bark or other elements of a plant through a distillation process. They are rich in ingredients like phenols, monoterpenes, and ketones and are often referred to as "essences." The plants' natural ability to resist bacteria and other attacks make them act as anti-microbial, anti-bacterial, anti-fungal agents that can be inhaled or applied topically.

When used topically, the body directly absorbs the benefits of the oil. In aromatic use the oils can be diffused in the air and the benefits of the vapour can be inhaled.

WHY INCORPORATE ESSENTIAL OIL INTO YOGA PRACTICE?

Essential oils are all around us and are renowned for their ability to promote emotional well-being and mental peace. A profound healing experience can be achieved by combining scents of essential oils in yoga sessions.

LEMON ESSENTIAL OIL

PURE LIKE LOTUS - PADMASANA

Padmasana is a cross-legged yoga posture that aids in overall blossoming like a lotus. It helps deepen meditation by alleviating various physical ailments and calming the body. Bending the right knee and placing it on the left thigh, and the same on the other side, sitting crossed-legged, creates the correct position. Place your hands on the knees in *mudra*, keeping the head straight, and spine erect. This lotus position helps to improve digestion, relaxes the mind, and reduces menstrual discomfort. It is also known to bring blood pressure under control.

Lemon oil is an astringent and acts as a detoxifying agent in nature. Also used for spiritual nourishment; it purifies, cleanses, and rejuvenates dull skin. When inhaled, it helps in increasing concentration and alertness. It is calming in nature and creates a positive mindset by eliminating negative emotions.



PLAYFUL DOG - ADHO MUKHA ASANA

Upward facing dog stretches the chest and spine, while strengthening the arms and shoulders. This improves posture by strengthening and opening the upper body and chest, keeping the buttocks and thighs firm. Upward facing dog is a backbend posture that rejuvenates and energises the body, providing relief from fatigue and depression.

Eucalyptus oil has most of the properties of a versatile essential oil. Its numerous benefits have attracted the attention of the entire world, and have stimulated a great deal of exploration in its usage in aromatherapy. Eucalyptus oil is an anti-bacterial, anti-fungal, anti-microbial, anti-viral, anti-inflammatory and decongestant in nature, which makes it a good ingredient in many medicines that treat respiratory problems. Another important reason that many people use eucalyptus oil is that it creates a cooling and refreshing effect. It is very effective in the treatment of stress and mental disorders. It rejuvenates the spirits of people by removing exhaustion and mental sluggishness.



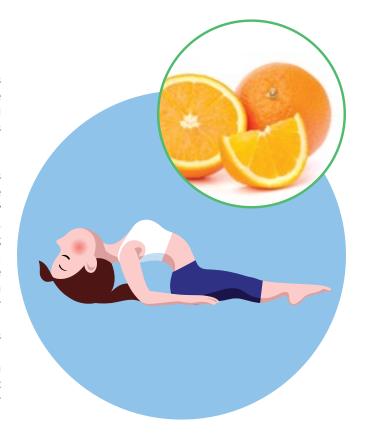


ORANGE ESSENTIAL OIL

HAPPY LIKE FISH - MATSYAASANA

Matsyaasana is a back-bending yoga posture that neutralises pressure on the neck and spine. Thus by stretching the front of the body it strengthens the upper back muscles, which improves spinal flexibility and posture. Regularly practising the fish pose energises the body and reduces fatigue.

Orange oil is very versatile and one can use it from head to toe. Its astringent properties can work wonders for oily skin and can be added to a daily skin care routine. Orange oil works very well all by itself as you can instantly feel waves of calmness after its application. It acts as a mood booster as it has antidepressant and sedating properties that help combat anxiety, frustration, and insomnia. Orange oil is extensively utilised in aromatherapy as it helps soothe tensed muscles and aids as an instant mood rejuvenator. It can also be blended with carrier oil and used as a fragrant lotion or cream. In aromatherapy, it aids in relieving anxiety, anger, and depression and is beneficial in promoting a healthy well-being as it boosts immunity. Orange promotes a feeling of happiness and warmth when used in aromatherapy. In addition to catalysing toxin elimination in the body, it also helps address digestive problems. It helps in stimulating lymphatic action to promote balance in water processes and results in detoxification of the body.



GINGER ESSENTIAL OIL

STRETCHED LIKE A DOCKED BOAT - NAVASANA

In Navasana, the body comes into a V - shape. The legs and back are lifted high; and the arms are extended forward and parallel to the ground. The legs are lifted such that they are at a 45-degree angle with the floor, extending the tailbone and turning the pelvis in towards the navel. The boat pose is important as it stretches the abdominal muscles, and the vital organs of the abdomen. This pose helps to reduce belly fat, strengthen the kidney, and also places the navel in the appropriate position. By burning additional fats in the arteries and veins, it helps to improve blood circulation. It also strengthens the back muscles and removes lethargy by removing toxins from the body, thus making the body active and energetic. The element associated with ginger is fire, which also aligns nicely with an inner fire theme. Ginger has the power to align transformations into reality in the mind. It has warming and soothing properties that make it useful in everyday life. The warm, earthy nature of ginger oil has soothing properties and makes it useful for massage.



JASMINE ESSENTIAL OIL

REGAL LIKE A COBRA - BHUJANG ASANA

To perform *Bhujang asana*, lie on your stomach on the ground facing down. Use your palms to elevate your upper body and stretch the torso. The spine is evenly arched and the shoulders are pressed down and legs extended. Holding your breath, remain in this position as long as you are comfortable. This asana strengthens the upper body with liberating effects for the spine, providing expansive movements for the lungs thus uplifting energy through the heart.

Jasmine aroma is used to lift the spirits at a time of depression or sadness. This oil works as an aphrodisiac. There is definitely something liberating about applying jasmine oil topically to enhance the libido and initiate intimacy.



LAVENDER ESSENTIAL OIL

CALM AND COMPOSED - SHAVASANA

Shavasana is usually practised at the end of the yoga session. The name comes from the Sanskrit shava meaning "corpse" and asana meaning pose. It is one of the commonly recommended and easiest yoga poses as it requires an individual to focus on their breathing. To practise the pose, the person lies on their back on the ground. The legs are comfortably stretched and the arms are relaxed alongside the body. This energises the chakras and provides inner stability necessary for personal growth. Shavasana helps to calm the mind and relax the body, which helps repair cells and tissue, thus providing relief from emotional strain or anxiety problems. This asana rejuvenates the body and reduces stress by soothing the mind and relaxing the muscles.

Lavender oil promotes an overall feeling of serenity and is an effective relaxant. Its calming and sedating properties make this oil a wonderful oil to ease mental stress and anxiety. When applied topically, the essential oil spreads a powerful scent with a versatile aroma which can perfectly complement *shavasana*. Also the aroma of lavender increases the body's ability to absorb the benefits of reclining in this pose. When inhaled the aroma notes enter the limbic system, where the lavender is absorbed and the body instinctively releases the energy.





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