# ESSENTIAL OILS MARKET REPORT SUMMER 2019

# **SUMMER FRESH!**



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Fun-filled vacations, drinks decorated with gaily-coloured umbrellas, and pool parties are the stuff summers are made of. One of the most vibrant seasons, summer is also the time when Mother Nature is in her prime. Served up in these pages are crisp and garden-fresh updates on the happenings in the world of essentials. Breeze through another edition of our special Summer Market Report 2019.

Most of our botanicals are thriving in the balmy, sun-kissed weather of May and June. Across geographies our farmer-partners are gearing up to, literally, reap what they have sown. We bring you the buzz from the fields as the harvest season is set to commence for several crucial crops.

Citrus continues to be the talk of the town. Last year, the market witnessed a slow easing out of prices and this trend has continued well into 2019. Orange production shows positive signs, but a decrease in demand for d-limonene and terpenes has resulted in some slacking. Many buyers perceive this as an opportune situation to replenish their citrus oil and terpene stocks.

As always, sustainability remains a top priority in our journey. The evolution is never-ending and the challenges do not dampen our zeal. Fast changing consumer trends are resulting in new business models and marketing communication. This was highlighted in our sustainability article in the Ultra Spring Market Report 2019. In this issue, we bring you how these changing trends may affect the future of farming especially relating to the production of fragrance raw materials.

Adding a sparkling freshness to the summer heat is the world's favourite cooling ingredient, mint. Let us plunge you into the cool depths of the different varieties of mint and its growing conditions in America.

The heritage and importance of Grasse as the historical pivot of the perfume world cannot be undermined. This quaint town in the South of France has been revered as the aroma capital for decades. Now, we share fascinating discoveries and experiences of a trip to this fragrance wonderland.

The benefits of natural healing are not unknown. Nature therapy is gradually gaining favour while aromatherapy is the oft-turned-to wellness therapy the world over. We look at how the two are interconnected in modern lifestyles.

With the promise of adding that ess-scent-tial touch of wellness to your life, we leave you to sit back and take in all that we have to offer. Happy reading!

Warmest, **Priyamvada Sanganeria** Director, Ultra International BV

#### **LEMON OIL**

#### Citrus limon L. Burm. F. O Argentina

Though there have been some hurdles in the smooth harvesting of the lemon crop, the situation is now under control and news is reassuring. The crop is delayed because of heavy rainfall leading to floods in the main production areas. The producers' woes have been compounded by a labour strike. Despite the accumulation of flood water, the copious rainfall and delay in harvesting have resulted in a longer time for the fruit to mature and, subsequently, produce a larger fruit size. Argentina's exports to the USA, as well as Europe, have seen a significant rise and this augurs well for the Argentinian industry. Supply has exceeded demand which has exerted a downward pressure on prices. This has enabled prices to be at a reasonable low. Fresh fruit demand is set to increase and prices may move up too.

📥 USD 25.00 /kilo





#### **BLUE CYPRESS OIL**

#### 

This beautiful, vivid cobalt-blue oil is much in favour and increasingly becoming a sought-after commodity. There is a backlog of orders and this has created a bottleneck in the seamless supply of the oil. The sector has seen proactive steps undertaken to increase production and expand the processing of blue cypress. These efforts have paid off - now there is another available stock flow that is consistent and dependable. However, as of now the augmented supply stream is nil and no dramatic increase is expected until June or July, when the new oil is likely to hit the shelves. With this, Australia is now set to produce more than 2 MT of blue cypress oil annually.

#### 📥 AUD 530.00 /kilo

#### **BUDDAWOOD OIL**

This is the one oil that is slowly gaining momentum and slowly coming to the forefront. Its production continues on a steady and reliable pace. Small volumes of the oil are already in stock. There is an encouraging rise in the number of enquiries for new formulations. The Australian industry is trying to streamline production so as to maintain an uninterrupted supply to the market.

📥 AUD 530 .00 /kilo



#### **EUCALYPTUS HORISTES**

#### Eucalyptus kochii 🛛 🕲 Australia

News about the eucalyptus production indicates that processing is continuing at a steady pace. Current demand is adequately met by the supply. Producers are looking to step up their production but the issue of the logistics of transportation of biomass to production, costs, and time is disrupting efforts to augment production. Current supply and production is sourced from established plantations, which are practising continual crop rotation. Given this scenario, it is predicted that the eucalyptol content of the product may gradually even out to an average of approximately 80% eventually.

📥 AUD 35.00 /kilo

#### **KUNZEA OIL**

#### Kunzea ambigua 🛛 🚱 Australia

Kunzea production capacities are humble and are pursued only through wild-harvesting. It flourishes in remote regions of Australia and enjoys the status of a cottage industry. Currently, there is almost no oil available. The weather has not been conducive and therefore volumes are low. The established plantations of Golden Grove Naturals (GGN) continue to work towards oil production but the volumes are expected only by 2020.

📥 AUD 700.00 /kilo

#### LEMON MYRTLE OIL

#### Backhousia citriodora 🛛 📀 Australia

There is negligible quantity of authentic oil available and the market has seen an influx of a significant volume of synthetic grade oil. Subjecting various samples to the C14 test have revealed synthetic adulterations. Most of the plantations of note have shifted their endeavours towards production of culinary dry leaf over oil production, since this brings premium returns. Overall, natural lemon myrtle is being produced in low volumes. GGN has taken a positive initiative and entered into contract harvesting and plantation management. The company has added 60 hectares of plantation, thereby adding volumes and easing availability in the market.

#### 📥 AUD 450.00 /kilo

#### MANUKA OIL

#### Leptospermum scoparium 🛛 🚱 Australia

Reserve stocks of manuka oil are limited; and with a healthy surge in demand there is almost no availability of stock. This plant is mainly wild harvested and continuous rainfall is making harvesting a challenge in remote areas. The high demand and tight supply has given way to change in the quality markers for this oil. With the superior grade +25% and +30% beta-triketone product becoming rare, the market is preparing for receiving greater volumes of the lower +20% beta-triketone product. It is anticipated that the 25% b-triketone product that was previously obtainable, will slowly be phased out, and will not be available as the market matures. Producers are trying to establish new plantations of manuka, but are unable to do so because of the prevailing high temperatures and adverse weather conditions that are certainly not conducive to new plants.

AUD 995.00 /kilo Min 25 beta-triketone AUD 845.00 /kilo Min 20 beta-triketone

#### **ROSALINA OIL**

#### Melaleuca ericifolia 🛛 🚱 Australia

Stocks of rosalina have dwindled to almost nil. The production at present is rather small, but GGN has established additional plantings of rosalina. Operations have commenced and the market expects to receive this additional volume by 2020. With this, GGN has become the largest supplier in the world. Plant observations have shown two specific varieties, the Northern rosalina that has higher linalool, and lower cineole content as compared to the genetics of the Southern rosalina variety.

📥 AUD 280.00 /kilo





#### SANDALWOOD QUEENSLAND OIL

#### Santalum lanceolatum 🛛 🛇 Australia

Sandalwood oil production continues to be firm with supplies ably meeting current demand. This plant, considered a weed in many parts of pastoral Australia, is processed through wild-harvesting in a sustainable manner. Although there is a little amount of stock in reserve, production is on to replenish the current reserve. Australian eastern sandalwood oil, not to be compared to the other varieties, is quite popular due to its unique floral overtones and spicy woody notes.

📥 USD 1195.00 /kilo

#### SANDALWOOD OIL SPICATUM

#### Santalum spicatum 🛛 🚱 Australia

There are large quantities of synthetic sandalwood oil in the market with very low amounts of the authentic variety. Low volumes of natural supply are being produced since the major players are looking to culinary dry leaf production as a richer source of revenue. GGN has achieved a milestone with the commissioning of a new boiler and foray into plantation management and contract harvesting. The company produces limited volumes of the oil, thus contributing effectively to the increased availability of sandalwood oil.

LUSD 1350.00 /kilo

#### **TEA TREE OIL**

#### Melaleuca alternifolia 🛛 🛇 Australia

The reserves of tea tree oil are totally depleted and there are no stocks. The weather has been unyielding with a harsh drought affecting much of the crop. The drought is the worst one recorded, and production has plummeted by 30% compared to a normal year. This year's forecast puts the crop size at approximately 600 MT.

Several large plantations began their harvesting operations a tad early in the hopes of opening their stocks early in the oil market and thereby quoting higher prices. Production is set to begin by July and August, which gives the plants adequate time to recover from recent extremely hot temperatures shooting to 43°C.

GGN decided to withhold from an early harvest, which has turned out to pay rich dividends. Spurred on by isolated regular rainfall in the Tucki Tucki area, and the ground temperature remaining warm, the plantations recorded uncharacteristically good growth towards the end of the season. Now with the imminent winter bringing down the temperatures, the plants are preparing to hold over for winter by increasing oil storage in their leaves, and shutting down growth. This is an opportune time to harvest to ensure optimal returns and yield of oil. There is some talk in the market of offshore Chinese manufactured tea tree oil being brought back, and sold as the Australian grade tea tree oil.

#### 📥 AUD 62.00 /kilo

AUSTRALIA

#### **ORANGE OIL CP**

#### Citrus sinensis 🛛 🕲 Brazil

Brazil reports a period of stress during the initial months. January witnessed extremely dry weather conditions leading to drought-like conditions. Water was scarce in the entire citrus belt except the southwest, leading to a drop in the yield in the groves. This erratic weather has been persisting for some time, in fact as far back as 2017. The spring rains, which were long overdue was one of the reasons behind the late blooming of the orange trees. Growth was hindered, eventually resulting in a sharp plunge in the number of oranges per tree. The rainfall during the fruit development and harvesting period from May 2018 to March 2019 was also deficient, at least 3% below the historical average. Followed by soaring mercury levels after the flowering, the fruit set and size was affected. There is a marked deviation between final average size in April 2019 against what was projected in May 2018. However, the aberration for each orange variety is attributed to irregular rainfall distribution during fruit harvesting season. The largest margin of deviation was observed in early varieties. This was a direct result of the dearth of water at the beginning of the crop season, which coincided with the harvest of these particular orange varieties. In comparison, the size variation was the least in the Pera Rio variety.

Brazil's orange crop estimates for the year 2018/19 by Fundecitrus are close to 285.98 million boxes of 40.8 kg each. This figure is a drop of almost 28.2% compared to the previous crop of 398.35 million boxes in 2017-2018 - 11.6% below the crop average in the last decade. The Hamlin, Westin, and Rubi varieties are pegged at 50.70 million boxes with the other early season varieties steadying at 14.66 million boxes. The Pera Rio orange saw an upward jump of 0.58% to touch 79.12 million boxes. Valencia and Valencia Folha Murcha oranges were predicted to deliver 107.91 million boxes, an increase of 0.26%; while the Natal variety anticipates a significant drop of 1.08% to deliver 33.59 million boxes.



The final crop total figures include: 50.70 million boxes of Hamlin, Westin, and Rubi varieties 14.66 million boxes of Valencia Americana, Seleta, and Pineapple orange 79.12 million boxes of Pera Rio 107.91 million boxes of Valencia and Valencia Folha Murcha oranges 33.59 million boxes of Natal orange

Out of the total orange crop, approximately 16.02 million boxes were produced in West Minas Gerais. Brazil has seen some losses this year due to adverse weather. More than the fruit drop, it was the fruit borer and fruit flies that inflicted severe damage. This year these pests have more than doubled in comparison to the other crops. The higher proportion of fruit from the third and fourth blooms, the fruits hanging on the trees for a longer time and delayed harvest have been conducive to the life cycle of these pests. The São Paulo production for the 2019-20 season is anticipated to be as much as 40% higher than the last crop due to the increased productivity of the trees.

Fundecitrus published its first crop estimate for the 2019-20 orange crop on May 10<sup>th</sup> 2019. The crop size forecast is above expectation at 389 million boxes signalling an increase of around 36 percent from 2018-19 crop.

The prices for orange are still soft. There are no sharp fluctuations in demand but several buyers are holding out in expectation of a further fall in prices. The higher productivity of the trees comes as a reason to cheer since this implies that the unit cost of production is lowered. This year's new bidding prices are considered to be lower compared to the input expenses. This, of course, curbs the revenue income and is rather demoralising for those who are solely dependent on sales in the spot market. As far as the fruit volumes go, most of the available stock is traded through previous contracts or already negotiated for in late 2018. But, there is hope yet for some stock availability from several smaller farmers who have been waiting for prices to be fixed this year in order to sell their fruits.

📥 USD 6.00 /kilo

#### **EUCALYPTUS CITRIODORA**

#### Eucalyptus Citriodora 🛛 🚱 Brazil

January 2019 witnessed a period of arid weather and drought but the crop revived with the onset of the rains. The weather has finally cleared and the crop season has begun in full swing. With a confirmed appreciation in demand in these months, already the stocks are depleted. The small producers have raised their prices by around 15% but no significant modification in prices is expected in the coming months. There are authentic reports of maintenance and planting of new areas. The markets are hoping that the constraints in stocks will be alleviated in the near future and a stable supply assured.

📥 USD 20.00 /kilo

#### LAVENDER OIL

#### Lavandula angustifolia 🛛 🚱 Bulgaria

Bulgaria is a leading lavender oil producer and there will be better clarity on the market situation, price, and quantities by the middle of July. Stocks are still available from previous season and the new crop looks promising. Lowering of prices can be expected for the new season.

📥 Euro 75 /kilo

#### **ROSE OIL**

#### Rosa damascena 🛛 🕲 Bulgaria

The price of natural and authentic Bulgarian rose oil holds their previous high price positions at  $\leq$ 6,800-7,000. Some quantities are left over from the 2018 supplies; however most producers of repute have found buyers for their stocks. Going by weather conditions, the new crop looks very promising. If there is a bounty of rose, then prices of rose oil will be in check at around  $\leq$ 7,000 as it was in 2018. Customers should note that rose oil offered at prices lower than prevailing market rates are often diluted or adulterated.

LUSD 6500.00 /kilo



#### **CASSIA OIL**

#### Cinnamomum cassia 🛛 🕲 China

With ideal weather conditions, favourable reports are coming in for the June to August crop. The cassia market has stabilised but prices are inclined to be on the softer side due to demand and the devaluation of the Chinese yuan. It could be argued that any meaningful purchases may cause prices to firm up. Therefore, we recommend our customers give us their estimates for the next six to twelve months in order to obtain best prices.

📥 USD 37.00 /kilo



#### **CLARY SAGE OIL**

Salvia sclarea L. 🔇 China

The factors that affect prices hinge on the raw material stock supply and the output of the same series of products. In addition to conventional clary sage oil, the plant also produces another favoured F&F product, ambroxide. The change in international demand will dictate the change in output from this botanical.

📥 USD 164.00 /kilo

#### **EUCALYPTUS OIL**

#### Eucalyptus globulus 🛛 🚱 China

Last year, China produced around 10,000 MT of eucalyptus oil. This year the demand has fallen due to the completion of earlier orders and a drop in prices for crude oil. This has somewhat dampened the enthusiasm of farmers and made crop collection rather challenging. Some factories are now lacking enough raw materials for distillation and prices are showing an upward trend.

#### 📥 USD 24.00 /kilo

#### PAST 6 YEARS' PRODUCTION OF EUCALYPTUS OIL





#### **GARLIC OIL**

#### Allium sativum L. 🛛 🕲 China

Having returned from an extensive trip in China, we concur that, for many reasons, it is difficult to understand garlic oil. However, the most compelling reason to be well-covered is that the Chinese government is taking a more hardline stance on pollution control. This policy severely limits the amount of reputable processors able to distill garlic. In recent months, prices have continued to soften. However, it is recommended to seriously look at contracting annual needs now, as prices may have just bounced off this year's low.

📥 USD 139.00 /kilo



#### **GERANIUM OIL**

There is an influx of high content oil in the market, and this had a stabilising effect on prices. Currently, there is not much action since production has just begun and most customers have taken a wait-and-watch attitude. Carryover stocks are low and farmers are unlikely to make concessions on price at the moment. However, a price correction is expected in the following weeks.

🖿 USD 148.00 /kilo

#### LITSEA CUBEBA OIL

#### Litsea cubeba 🛛 🚱 China

The crop season begins in January and continues through till December. Initial signs were indicative of a good harvest but heavy rainfall and flooding put a spanner in the works. A large portion of the berries were damaged and availability was so brutally affected that many pickers moved to the mountains to collect berries on high ground. It is reported that litsea volumes are down 300 MT from even last year's off-crop. In addition, China's strict environmental protection policy and newly imposed duties could have a significant downstream lasting effect on the output this year. The enforcement of the country's strict environment protection laws will compel many of the smaller factories to stop production. At the same time, some new factories that have commenced operations have added to the competition for raw materials. Today, prices are at high levels with extremely limited availability of litsea cubeba oil and natural citral. In fact, with the higher costs of disposing waste residue and wastewater, prices are set for further elevation. The next ten months are crucial with the new oil expected to come in by August. It is advised that clients lock in requirement volumes and prices now, since availability could become worse until the new crop. The market is hoping for better news from the next harvest in August-September 2019.

#### 📥 USD 29.00 /kilo



#### MAGNOLIA FLOWER OIL

#### Magnolia grandiflora 🛛 🚱 China

Supplies of fresh flowers are constrained; and this limited supply of raw material available in the market has put pressure on raw materials that can be used for oil production. As a result, prices are skyrocketing. The flower tea market commands top priority for the fresh flower suppliers, and then comes the essential oil industry. Naturally, due to the dwindling output and greatly depleted oil yield, the price of magnolia flower oil is poised to soar.

📥 USD 1370.00 /kilo

#### **MAGNOLIA LEAF OIL**

Magnolia grandiflora 🛛 📀 China

Magnolia leaves are collected only after the completion of collection of the flowers. The factories require around 15 MT leaves daily. Magnolia leaves are picked only at one time, and yield is high only from the older leaves. The newly-picked leaves are best distilled after 2 to 3 days after which they fade. So the output of leaf oil is very limited, and it is anticipated that prices will rise further.

📥 USD 175.00 /kilo

#### **NEROLI FLOWER OIL**

#### 

April is the main season for neroli flower oil. The bitter frost in 2016 impacted the crop and led to a low yield in 2017. Consequently, output too has plunged with suppliers unable to meet market demand. Output this year is predicted to be around 1.4 MT across the entire Fujian province, with factories having zero surplus stock. It will be a tight situation for sales afterwards and for fulfilling preorders.

📥 USD 2030.00 /kilo

#### **STAR ANISE OIL**

#### *Illicium verum* **③** *China*

Cultivated primarily in the Yunnan Province of China, star anise is distilled twice, once from April to June and again from October to December. Last year witnessed a sharp escalation in prices due to frost and snow damage to the trees. In October, the peak harvest season, output of star anise oil was far below the usual levels. As a result of lower output and devaluation of the Chinese currency, prices remain high. Buyers are advised to cover their requirements for the coming six to twelve months.

📥 USD 21.00 /kilo

#### **OSMANTHUS OIL**

#### Osmanthus fragrans L. ③ China

The supply for this product is relatively tight at present. There are almost zero inventories with most of the suppliers, and a resultant price hike is on the cards. New material is expected by the end of this year. The collection of osmanthus flowers commences only after the Mid-Autumn Festival; thus it is something of a challenge to predict prices so early. Judging by the weather conditions so far, the output of flowers will not deviate too much from last year's figures. Rising labour costs will also lead to a corresponding upward trend in the cost of flower collection; consequently, the price of new material is also anticipated to be on the ascent.

📥 USD 1910.00 /kilo



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Clary sage has seen a significant increase in plantings during spring 2017, which was harvested for the first time in July 2018. This year, a lower crop is anticipated since these plots will be less productive due to the second harvest cycle. Also the area of plantings in hectares has come down considerably this spring.

📥 Euro 110.00 /kilo



#### LAVANDIN GROSSO OIL

#### Lavandula hybrida var. grosso 🛛 🚱 France

Many parcels were torn off after the drought of 2017, leading to a sharp rise in lavandin prices. Recovery efforts of plantations since November 2018 became extremely challenging due to the dry end of winter and beginning of spring. Things are on the mend with the rains during end-April coming as a welcome relief. It is still too early to forecast the harvest since the weather from mid-June to mid-July is the most important influencing factor for the lavandin crop.

📥 Euro 28.00 /kilo





## THE TRADITION THAT IS GRASSE AN ACCOUNT OF THE HISTORY OF GRASSE THAT MAKES IT A PERFUMER'S TREASURE

#### Nathalie Sahut, Fragrance Influence, France

Spring is definitely my favourite season. This morning I got up early and moved quietly to avoid waking the rest of the house. Wrapped up in my favourite cashmere kimono, with a steaming cup of coffee in my hand, I went out into the garden. I stepped, barefoot, onto the cool damp grass, as the first rays of sun gently warmed my skin. Facing the hill dominating the town of Grasse, I enjoyed the peaceful moment. And, in that moment, I was swept back in time.

At this time of year, the orange trees are covered in their delicate white blossom. Their rich, opulent fragrance floods me with memories of my childhood: a happy, sunny childhood with frequent holidays spent at the house of my grandmother, Augustine, in a charming little village close to Grasse.

Augustine baked the most wonderful "fougassette," a sort of brioche deliciously flavoured with orange flower. One day, at teatime, she explained to me that a "fougassette" was originally a hunk of dough thrown into the oven to test the temperature. Once cooked, it served as a snack for bakers and their apprentices. For me, the exquisite flavour of a "fougassette" will forever be associated with tender-hearted generosity.

I have wonderful memories of the times I spent with my grandmother, who used to tell me stories about the Grasse area that she loved so much.



Perched at an altitude of 350m between the mountains and sea, Grasse is a typically Provençal town with its narrow, meandering streets. Thanks to its location, the picturesque town enjoys generous southern French sun, a warm Mediterranean climate, and cool nights, making it an ideal spot for cultivating numerous perfume plants.

From an early age, my grandmother would take part in the season's harvesting of blossoms with her parents, and other children from the village. They would get up very early each morning to pick the precious flowers, which are highly prized by perfumers for their unique and exceptional fragrance.

The region's most emblematic blooms include *Rosa centifolia* and *Jasminum grandiflorum*.

During the month of May, the rose buds open out one after the other. Bursting with perfume, the delicate flowers are harvested daily starting from noon. To preserve their perfume and keep them fresh, the flowers are transported in hessian bags to the factory, where they are directly transformed into "concrete," and then from "concrete" to "absolute" – the raw material used by perfumers to formulate their loveliest creations. Their exquisite floral scent with delicious honeyed accents of *rose de mai* is irreplaceable.

#### FEATURE



A little later in the season, the jasmine flowers begin to open. In the humid heat of summertime, thousands of star-shaped flowers bloom every night from August up to the first frosts of October. The same ritual is repeated every morning, with seasonal pickers arriving in the fields from six o'clock. As the sun casts its first rays, they gather the jasmine until the end of the morning. This delicate job calls for careful picking. To preserve the heady, sensual note of the fragile white flowers, they are transported in willow baskets to the factory to transform.

Around Grasse, the warm summer evenings are deliciously perfumed with the voluptuous scent of jasmine. I have so many fond memories of gatherings on the terrace of Augustine's house, surrounded by friends and family, lulled by the song of cicadas gradually fading over the course of the evening.



**66 Courtiers in Versailles were particularly** *keen on smothering their unpleasant odour with great quantities of perfumed powders, ointments, and lotions.*  It's easy to see why the cultivation of numerous perfume plants has made Grasse the world's capital of perfume, dating back years. Few people know, however, that the town's love affair with fragrance started during the Renaissance. In the sixteenth century, Grasse was known for its traditional tanning activity. The leather production process and leatherwork required a great deal of water, and Grasse proved to be an ideal spot for this activity, with tanners working around the small canal that runs through the town.

The tanners of Grasse built up an unparalleled reputation. However, the tanning generated a strong, disagreeable smell. The manufacturers had the idea of perfuming their production of gloves, bags, and belts with the natural essences available in the region. Courtiers in Versailles were particularly keen on smothering their unpleasant odour with great quantities of perfumed powders, ointments, and lotions. In 1614, King Louis XIII officially recognised the new corporation of "master glovemakers and perfumers".

With its warm, sunny climate, the countryside around Grasse became covered with fields of flowers. Rose, jasmine, tuberose, and orange flower crops were developed, bringing new fragrances to the town. Glove-making slowly declined and the perfume industry took over, reaching a peak in the middle of the 18<sup>th</sup> century. Large family-run businesses emerged, some of which continue to this day.







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# **66** In 1905 six hundred tonnes of flowers were harvested, and in the 1940s five thousand tonnes were produced annually. In the early 2000s the total production of all types of flowers was less than thirty tonnes.

In the 19th century some raw materials began to be imported from abroad, especially from the colonies. In 1840 Grasse featured numerous companies split into three sectors: plant growers (farmers who cultivated the land to grow precious essences), flower merchants (traders who imported new essences from elsewhere), and manufacturers (who produced the perfumed compositions). Around 1875 about 65 companies were based in the town.

In 1905 six hundred tonnes of flowers were harvested, and in the 1940s five thousand tonnes were produced annually. In the early 2000s the total production of all types of flowers was less than thirty tonnes.

The 19th century was a prosperous one. The perfumeries developed partly thanks to a clientele of American tourists visiting the Riviera, who came to buy perfumed presents and traditional gifts from Grasse (antique jewellery, embroidered linens, and jams).

From my earliest years, my lovely grandmother would tell me stories about this small town blessed by the gods, the only town in the world where the word "factory" still evokes beauty, elegance, and secrets. Today, Grasse is still the seat of traditional perfumery, home to numerous famous "noses," and the ultimate destination for all lovers of quality perfume.

Elisa Paris

col france che

Corre

I mentally write this little note to Augustine:

# CARTE POSTALE Ce côté est exclusivement réser- à l'adresse.

# Dear Grandmother,

You'll be pleased to know that following a decade of efforts, the town of Grasse that you loved, features on the list of the intangible cultural heritage of humanity. All of the craftsmanship associated with perfumery is now protected and recognised all over the world. You see, dear Augustine, traditions go on, and expert knowledge is transmitted from generation to generation. Thank you for, inadvertently, making me part of the tradition.

Célestine, and Germain, your great grandchildren, have just woken up. They have joined me in the garden and are snuggled up against me. They are impatient to hear stories of this wonderful region that you grew up in, that still has so much to offer them.

Love yous Nathalie



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#### **DAVANA OIL**

#### Artemisia Pallens 🛛 😵 India

Davana is a sensitive botanical and produces a high yield only when weather conditions are just right. The harvest in March did produce a good yield due to a combination of good weather and the amount of acreage planted. Unfortunately, the farmers planted too much and this resulted in softer prices. In view of the depressed prices, it is likely that farmers will drastically cut down on acreage and look to other crops to whittle down the excess inventories from last year. Prices seem to be touching a trough; it is an opportune time to cover long-term requirements.

🔟 USD 330.00 /kilo

#### **INDIAN BASIL OIL**

#### Ocimum sanctum 🔇 India

The demand for Indian basil has diminished considerably. With not many orders coming in, the market scenario remains unchanged.

📥 USD 14.50 /kilo

#### **LEMONGRASS OIL**

#### Cymbopogon citratus 🔇 India

Lemongrass commands steady prices at the time of writing this report. The supply of synthetic citral is improving significantly; thus hope for a price correction in the coming months is on the rise.

📥 USD 24.50 /kilo

#### PALMAROSA OIL

#### Cymbopogon martini 🛛 😵 India

This oil has been severely limited in India. There is now another manufacturer of note who is supplying a stream of new oil, transformed into aromatic geranyl acetate and geraniol natural.

🔟 USD 42.00 /kilo

#### **MENTHA ARVENSIS OIL**

#### Mentha arvensis 🛛 🚱 India

The market was quite stable in March 2019 with not much activity. The crop was overdue as a result of late harvesting of potato, mustard, and sugarcane. Present indications point towards an estimated 20% to 25% increase in crop figures as compared to 2018. That means an impressive 45,000 MT. However, carryover from 2018 is nothing to write home about.

Of late the market has seen an influx of synthetic mint that is being produced in India. Coupled with additional capacity of synthetic menthol coming live this year, the total availability of menthol is poised to overtake the demand by a considerable margin. While the situation is expected to leave a significant carryover for the 2020 crop year, it will also have a lowering effect on prices. If production is on track, with no unexpected surprises or disruption in synthetic supply, producers and end users can be tension-free this year.

Adulteration is becoming a big challenge with very poor availability of clean material right now. Many customers are confused by the low prices natural material offers, which is in fact highly adulterated with synthetic menthone and menthol. On the other hand, farmers are becoming very strong in India with better financial power to hold the material, and to wait for higher prices.

DMO (dementholised mint oil) continues to be in short supply. Lower processing, and a better margin in converting menthone to menthol is key to the shortage. 2020 may be a tight year for DMO again, as it is a major byproduct of menthol powder production. With the Malaysian synthetic plant, assume reduction in demand for menthol from China, which means lesser production in 2019-20 for DMO.

🗠 USD 24.50 /kilo

#### **SPEARMINT OIL**

#### Mentha spicata 🛛 🚱 India

There is not much activity in the spearmint arena. Demand for the oil is rather feeble and consequently, prices have plunged. The new crop is less than last season's.

#### 🗠 USD 41.00 /kilo

#### **PEPPERMINT OIL**

#### Mentha piperita 📀 India

Indian peppermint oil prices from June 2017 to May 2018 receded to levels just slightly below the North American oil. The main factors for this are the somewhat confusing GST tax regime and new currency changes in 2017-2018. The Indian rupee continues to weaken against the US dollar. Prices should remain around the levels of today but are positioned to firm up. Overall the rates are similar to last year with a modest firming due to many factors.

The crop is predicted to be delayed this year due to the late harvesting of potato which has impacted the usual crop cycle. Another significant factor is the 30% reduction in crop acreage. Despite these initial hurdles, the crop is progressing well. With extremely low carryover, it is going to be a tough road ahead this year, but distillation time promises to bring some respite with easing of prices, though this might be a temporary phase. Hope is pinned on a good demand, which will nudge the price of the pure Indian peppermint variety upwards.

📥 USD 42.00 /kilo

INDONESIA



# COMMITTED TO IMPROVING LIVES

**INDONESIA** 

#### **BLACK PEPPER OIL CO**<sub>2</sub>

#### Piper nigrum L. ③ Indonesia

Van Aroma's conventional black pepper oil is well-known. Now clients can also consider black pepper oil and oleoresin obtained through supercritical fluid extraction. The process involves the use of pharmaceutical grade CO2 under high pressure and low temperature. This results in a clean black pepper profile unlike the conventional pepper oil, which contains more terpenes. Production has been increased to deliver pepper oleoresins of various percentages with zero residual solvent.

📥 USD 68.00 /kilo

#### **CANANGA OIL**

#### Cananga odorata 🔇 Indonesia

Like any other flower oil, the cananga crop was severely impacted by profuse rainfall. Harvests have been spaced out; but the demand for the oil has overtaken the production. This surge in demand is propelled to a great extent by the aromatherapy industry. Cananga oil has made its place in the aromatherapy industry as a unique and special alternative to ylang ylang. Prices are expected to climb in the coming months.

📥 USD 140.00 /kilo

#### **CITRONELLA OIL**

#### Cymbopogon winteranus ③ Indonesia

Indonesia has bounced back to reclaim its *numero uno* position as the largest producer of citronella oil. There is a steady stream of supplies coming from Java, Sumatra, and now Sulawesi, leading to competitive low price levels. The ISOspecified material is not common among all exporters; and it is important that buyers are cautious of unspecified material being offered at much lower prices. Citronella prices are predicted to be steady at these levels for the foreseeable future. Given that it is a perennial grass, the availability too is expected to remain constant for the time being.

📥 USD 20.00 /kilo

#### **CLOVE OIL**

#### Eugenia caryophyllate ③ Indonesia

An abundance of rainfall and slow down during the month of May has seen a parallel slowing in the production for clove oils. There has been a considerable dearth of dried clove leaves, which meant fewer raw materials for processing. Prices have held their low thresholds with crude clove leaf oil hovering around levels of USD 14-16/kg. In the imminent clove bud season, there has been a shift in focus from leaves to buds, which brings better returns for farmers and distillers. Consequently, a drop in production of clove leaf oil is anticipated along with a corresponding rise in clove oil prices until the bud harvest ends. Then focus will shift again to clove stems and leaves.

USD 14.75 /kilo 80% rect
USD 14.25 /kilo 82% crude
USD 16.25 /kilo 85% crude

#### KORINTJE CASSIA BARK OIL CO<sub>2</sub>

#### Cinnamomum cassia 🔇 Indonesia

It is interesting to note that cassia cinnamon constitutes more than 70% of the cinnamon flavouring used in the west. Under the Van Aroma banner, cassia bark oil now makes its debut in the market. Our cassia bark oil is processed from *Cinnamomum burmannii* procured from the famed Kerinci region in Sumatra. The oil is sweet, and abounds in cinnamic aldehyde. In addition, it contains several water-soluble components, which are otherwise difficult to capture in the steam distillation process.

📥 USD 375.00 /kilo

#### **MASSOIA BARK OIL**

#### Cryptocaria massoia 🔇 Indonesia

Massoia bark oil is among the expensive Indonesian essential oils. The plant is mainly harvested from June to September, when the nutmeg and mace harvests slow down. Interestingly, if nutmeg prices are favourable and supply bountiful, the production and harvesting of massoia bark can be shortened.

LISD 400.00 /kilo 50-60% lactone C10

- LUSD 760.00 /kilo 95% lactone C10



#### **PATCHOULI OIL**

#### Pogostemon cablin 🛛 🚱 Indonesia

There have been incessant rains and storms leading to excessive flooding in and around the key producing areas. This has created a grim situation on the patchouli front. Crops have been damaged; harvest has slowed down, as has the pre-distillation drying process. The Kolaka facility of Van Aroma was submerged and critically affected by floodwaters for over four days in the past month. Fortunately there were adequate preparations to handle the overflow from the river adjacent to the property and the plant recovered and soon got back to its previous footing. May also happened to be the holy month of Ramadan; this was one of the factors influencing the slowdown in patchouli production.

📥 USD 42.50 - 56.50 /kilo

#### **NUTMEG OIL**

Myristica fragrans Houtt. 🔇 Indonesia

Nutmeg has been witnessing escalating prices due to the lack of availability of immature fruit and nut for distillation. The nut is garnering more attention as a spice and use for oleoresins. Van Aroma's nutmeg oil production is focused on making a special grade of nutmeg oil that is allergen-free of safrole and methyl eugenol.

📥 USD 66.00 /kilo

#### SUMATRAN COFFEE ARABICA OIL CO,

#### Coffea arabica L. 📀 Indonesia

Our newest offering from the Van Aroma stable is a unique essential oil extracted from carefully roasted and ground *Sumatran Coffea arabica* beans. Taking utmost care to procure raw materials sustainably, this arabica coffee oil is processed through the SFE (supercritical fluid extraction) method. The beans are subjected to high pressure close to room temperature, yielding a rich full-bodied aroma of coffee. Samples are available for interested buyers.

📥 USD 145.00 /kilo

#### **VETIVER OIL**

#### Vetiveria zizanioides 🛛 🚱 Indonesia

Prices of Indonesian vetiver oil are stable and low compared to the Haitian variety. The quality of the Indonesian product has seen a drastic improvement with the use of newer, sophisticated distillation equipment. Van Aroma now offers vetiveryl acetate, a unique product derived from vetiver oil Java.

📥 USD 225.00 /kilo



#### VANILLA

#### Vanilla spp. 🔇 Indonesia

After Madagascar, Indonesia is the world's second largest producer of vanilla, one of the world's favourite flavouring (and to a lesser extent, fragrance) materials. The Indonesian supply chain remains fragile in part because of the series of earthquakes and tsunamis in the vanilla growing areas of Sulawesi and Lombok in the second half of 2018, causing an estimated USD 1 billion plus damage in the region. As a result, in excess of 15% of the Indonesian vanilla crop was destroyed, leading to reduced export levels in 2019.

The high vanilla prices of recent years have led to an expansion of Indonesian vanilla production, and domestic output in 2019 is estimated at 100 – 125 MT. With the recent extensive plantings combined with rising yields, production is expected to increase further. The majority of production is lower grade vanilla although some high quality gourmet and food service quality is produced. Efforts are being made to expand the quality and sustainability of Indonesian production.

In addition to local production, an estimated 40 – 50 MT are brought over the border from neighbouring Papua New Guinea, which is also increasing its vanilla production. The vanilla imported into Indonesia from PNG is often vacuum-packed and only partially cured. In Indonesia, this vanilla is finished and re-exported, often as vanilla of Indonesian origin. This vanilla is very different from the vanilla that is directly exported from PNG.

In 2018 vanilla bean prices peaked at around USD 600/kg but have fallen significantly since then. Nevertheless, by historic standards, prices remain high and are likely to fall further. But, if prices continue to remain attractive to growers then it is probable that Indonesia will continue to expand production and assist in diversifying the supply chain.

#### **LEMON OIL**

#### Citrus limon L. Burm. F. ③ Italy

October 2018 witnessed extreme damage to crops caused by heavy rains. However, it was fortuitous that lemon trees were relatively unaffected compared to other citrus varieties. The blood orange was seriously affected and the market continues to reel under the pressure of excess demand and low supply. The lemon crop achieved a normal 500,000 MT out of which around 100-150,000 MT is supplied for processing into oil. The Italian market is also subject to the dynamics of the fresh fruit sector; and industry fruit prices have risen to very high levels. This continues to pose a major hurdle for the domestic processors. Distillers and processors face stiff global competition from other regions that are offering significantly lower fruit prices.



Italy is facing a challenge in terms of the current lemon crop. There is an acute shortage this summer as the farmers grapple with bouts of the black spot disease of citrus crops. Prices for the fresh fruit continue to be exorbitant; and this is one of the reasons that traders are turning to South American and South African supplies. Eastern Sicily farmers too are having a tough time dealing with the Mal Secco fungal disease that is plaguing the lemon harvest. Coupled with unfavourable climate changes in the region with low temperatures and strong winds, the news of lemon production is not too reassuring.

📥 Euro 26.00 /kilo

#### MADAGASCAR

#### **BLACK PEPPER OIL**

#### Piper nigrum L. 🔇 Madagascar

Another oil that is generating considerable market interest is black pepper. After several years of tension on pepper prices, the rates have plummeted following the global trend of falling prices. Current price levels are at par with previous levels of 2007-2008. Traders are hopeful that this may help in reviving the interest in the Madagascar variety of black pepper oil, which is largely appreciated in perfumery.

#### 📥 USD 89.00 /kilo

#### **CLOVE BUD OIL**

#### Eugenia caryophyllata 🛛 🚱 Madagascar

The clove bud oil situation is an interesting one. Last season's clove crop was considerably smaller than expectations standing at less than 4,000 MT. Some reports even pegged an extremely low figure of 1,000 MT compared to 15,000 MT for a good strong crop size. In such circumstances, there should be no leftovers like off-sizes or sifting residues for the distillation. 2019 promises to be an eventful year for clove bud oil with the industry anticipating a bit of tension. Surprisingly, so far, there has been no change or reaction on the price and availability front. The market is on tenterhooks and awaiting developments.

📥 Euro 48.00 /kilo

#### **CLOVE LEAF OIL**

#### Eugenia caryophyllata 🛛 🚱 Madagascar

The distillation for clove leaf oil has slowly resumed from March. Normally, distillation should go on increasing if demand is there, until June/July. As a result of the lull in global markets in April, sales reduced, as did the local prices. The nearby local stock has fetched comparatively higher prices from exporters. This may lead to a possible resistance to a possible further easing of prices, until the market picks up again. A word of caution though; buyers must be careful about sub-standard oil quality. There have been complaints about the goods exported. In fact, market hearsay cites the instance of a container that was sent back to Madagascar. This is a result of traders exerting extreme pressure on prices; not batting an eyelid to working with outsiders or newcomers who are either not scrupulous or vigilant about quality.

📥 Euro 17.00 /kilo

#### Vanilla spp. 🔇 Madagascar

VANILLA

Madagascar dominates world natural vanilla production, usually accounting for 60% to 80% of global output depending on its annual production. The very high vanilla prices of recent years have led to efforts to expand production in other countries including Papua New Guinea, Indonesia, Uganda, Tahiti, Reunion, Comoros, French Polynesia and India. Nevertheless, Madagascar, Indonesia and PNG still account for over 90% of world output.

Vanilla production in Madagascar is concentrated in the northeastern Sava region, where the best climatic growing conditions are combined with the availability of low cost labour. An estimated 60,000 vanilla farming families and hundreds of thousands of seasonal workers produce the vanilla, which is vital to the wellbeing of both the region and the country. The region's susceptibility to climatic variations, including cyclones, can lead output to fluctuate considerably. Thus, the crop in 2016 was estimated at 1,100 MT compared with 1,600 - 1,800 MT in 2018. Yields improved considerably in 2018 thanks to the maturity of the beans and better curing ratios, while reduced pre-financing and lower demand for quick-cured beans also helped to raise the volume of high-grade beans versus low-quality beans. The higher production and increased exports put downward pressure on prices, which had peaked at approximately USD 600.00/kg in 2018. By the end of March 2019 some 1,200 MT had been exported but there are still sizeable quantities of good quality 2018 vanilla beans in stock, estimated at 100 – 200 MT. This in part reflects the ability of end-users in recent years to utilise lower quality vanilla, thus lowering demand for higher quality material. Meanwhile, demand for vanilla is wider and more broad-based than in previous decades and this should help to reduce price volatility. Most industrial vanilla users keep inventories as low as possible and adopt short and medium term buying strategies.

Harvesting has commenced in northern Madagascar and, while it is impossible to give an accurate production forecast, the 2019 crop will almost certainly be lower than the previous year. This should help reduce downward price pressures, and there may even be some short-term supply problems. Fortunately there was no serious cyclone damage this year, but flowering was both later and less abundant and it will be difficult to maintain the quality levels of 2018. Nevertheless, the new government has been more pro-active towards the vanilla sector and if the range of initiatives is implemented this should assist both quality and stability in the sector. Government measures include: a June 1<sup>st</sup> cut-off date for the export of undeclared stocks; strict regional harvesting dates to try to improve bean maturity and minimise quick curing, discouraging theft, speculation and pre-financing. Exports of the 2019 crop are expected to begin in late October.

It is far too early to estimate the crop size for 2019. A lot will depend on the ability of the government to enforce the aforementioned measures, which could easily improve crop yield and quality. However, we can say with relative certainty that crop size in 2019 will be smaller than 2018.

Despite the price falls over recent months, the current high prices are not sustainable in the longer term and it is likely that further downward correction will take place during 2019, in part because of rising production outside Madagascar.



## SCENT-SATIONAL FORESTS THE BENEFICIAL EFFECTS OF FOREST THERAPY

#### Sumitra Mazumdar

For ages, practitioners have walked the woods, to take in nature's sights and scents. As nature therapy and aromatherapy gets wider acceptance in the modern lifestyle across the world, a look at how the two are interconnected.

"And into the forest I go, to lose my mind and find my soul." John Muir, perhaps the greatest naturalist of all time, had got it right, back in the 19<sup>th</sup> century. This quote portrays his passion for spending time in wooded areas in all its senses, a fulfilling experience of exploration and adventure.

Aromatherapy in the woods is to simply breathe deeply, to inhale, exhale, and enjoy the present moment. There is something inherently therapeutic about it. A woody fragrance in the air, the sight of towering trees, rays of sunlight piercing through, the chirping birds, the humming of bees, the rippling streams, the rustling leaves, the winding pathways, and the aroma blends of pine, cedar, juniper, and cypress trees is simply something to be smelled to be believed. Beech trees take the weight off your shoulders and spruce trees make even the tired, weary soul into a ball of energy. The rich and warm aroma of sandalwood and cinnamon forests brings a wave of happy memories, serenity, positive vibes, and immense joy.

Scientific and clinical studies show that being outdoors, in natural surroundings, brings medicinal and therapeutic wellness to an individual similar to aromatherapy. Not surprising, since most trees and plants in forests emit numerous biochemicals and produce aromatic essential oils that are often medicinal.

Like aromatherapy, nature therapy can be used to improve the mental and physical well-being of people across the world; a walk through a forest instils curative effects upon the body, an experience similar to inhaling its essential oils.

Beech trees take the weight off your shoulders and spruce trees make even the tired, weary soul into a ball of energy. The rich and warm aroma of sandalwood and cinnamon forests brings a wave of happy memories, serenity, positive vibes, and immense joy.


And trust the Japanese to hit upon the boons of being mindful in nature before the rest of us. Since the 1980s, the concept of Forest Bathing or Shinrin-yoku has been gaining prominence in Japan, and has recently made its way to the west. Numerous Japanese studies confirm that humans need to spend time in nature regularly for good health. Benefits of forest medicine are catalogued by physician Qing Li, Chairman of the Japanese Society for Forest Medicine, in his book 'Forest Bathing'. He states, Shinrin-yoku, is a short, leisurely visit to a forest and it is regarded as being similar to natural aromatherapy.

The New Yorker magazine described it thus, 'The Japanese practice of Shinrin-yoku is based on a simple premise: immerse yourself in the forest, absorb its sights, sounds, and smells, and you will reap numerous psychological and physiological benefits'.

Indeed, research shows that trees have healing powers. Antimicrobial essential oils called phytoncide molecules are released, that protect trees from germs, moss, and lichen and are also considered beneficial for people. Merely smelling the terpenes and other phytoncides emitted by the plants in the forest can lower blood pressure, pulse rate, anxiety, depression, and stress hormones like cortisol, while giving mental clarity, sound sleep, and a significantly increased sense of well-being.

The beneficial effects of forest therapy can be attributed to the olfactory system. Phytoncides like  $\alpha$ -pinene and beta-pinene, which are commonly occurring terpenes in plants induce a relaxed state of mind.

Using the practice of forest therapy, a slow, preferably barefoot (careful!) walk on the grass, using breathing exercises and meditation to enhance the experience, one can achieve deep communion and harmony. Just by being in nature, uninterrupted and contemplative, one begins the pleasurable journey back to oneself. The soil too plays an important role in making people healthy and happy. Smelling and touching the wet earth stimulates the immune system. The woody scents include trees and outdoor scents. But a walk in the woods isn't just about trees. The crisp air, the citrus fruits, and the wild flowers are all present in the environment.



Thus, a blend which resembles a wooded or forest area includes oils of cypress, fir, pine, cedarwood, along with the spicy, floral and fruity oils like wild orange, lemon, frankincense, myrrh, nutmeg and cinnamon. To get a blend of earthy smells, add patchouli, valerian and angelica oils.

We live in an urban environment, or work in an indoor setting, where we may be experiencing symptoms of 'Nature Deficit Disorder'. Richard Louve wrote the best-selling book, 'No Child Left Inside', coining the term 'Nature Deficit Disorder' which he describes not as a medical term but as a metaphor for the increasing separation between humans and the natural world.

Nature Deficit Disorder can come in many forms, from a sense of disconnection, depression, stress, and high blood pressure, to name a few. Resignation and a life without meaning is thought to be intimately connected to disconnection from the natural world as well. A crucial method for reversing Nature Deficit Disorder is to incorporate aromatherapy into daily life.

Indoors, sniff essential oils, spritz them in the air or to be in the midst of a majestic presence of energy, diffuse the oils with a powerful humidifier. You can also burn incense or candles made with natural elements.

Aromatherapy cannot fully substitute an authentic nature experience. However, using pure essential oils at home and at work recreates the fulfilling experience of being in the forest. Blends of essential oils are recommended as they recreate the natural blend of the many different aromatic compounds found in nature.

Diffusing any tree essential oils such as cypress, pine, fir, cedarwood, sandalwood, rosewood or Manuka with a citrus tinge of orange, bergamot or lemon oil and a splash of floral oil as jasmine, ylang-ylang or geranium will create a delicious and well balanced blend to enhance life on many levels.

The forest itself is a living organism, a community in constant communication as trees talk though their root systems. A forest is not just a collection of trees, it is a system working together, in sync with each other. Recent research and studies are showing what aromatherapists have been telling us for years, that the aromatic compounds in plants, when inhaled and breathed, help in healing the body and mind, leading to a life of balance and taking in the simple natural pleasures. The goal is to focus on sensations, smell and sound.

Sumitra Mazumdar is a Delhi-based aromatherapy enthusiast who has completed the American College of Health and Sciences' Aroma 101 and is a NAHA member.

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MEXICC

#### **KEY LIME OIL**

#### Citrus aurantifolia 🛛 🚱 Mexico

Mexico holds second position in lime production after India with annual production slightly more than 2.5 million MT. Exporting its fruit to twenty-eight countries across the world, the USA remains Mexico's largest buyer of key limes. The district of Buenavista in Mexico leads in lime production with more than 21,000 hectares planted and a harvest of more than 420,000 MT. Citrus production is concentrated in the region of Tierra Caliente and the municipalities of Apatzingan, Aguililla, Tepalcatepec, Paracuaro, La Huacana, Mugica, and Gabriel Zamora. Reports indicate that there are about 6,731 lime orchards registered in the Mexican state of Michoacán. In addition, 5,915 hectares are dedicated to grapefruit plantation, 126 hectares for orange, and 353 hectares for lemon. Each hectare is estimated to produce 19 MT of fruit.

The 2018 crop season in Mexico saw a marginal fall in prices. Production, too, took a plunge due to a drop in demand leading to several producers reducing their inventories. Colima witnessed new grove plantings last year and expectations of a robust crop again rose with the young trees maturing and bearing fruit. Few growers are planting more trees per hectare in order to counter the effects of citrus greening in anticipation of a shortened life span for those trees.

Though some of the major distillers in Michoacán were not very active this past season, it is expected that they will join in the production if there is a surge in demand for the oil. Considering cold-pressed (expressed) lime oil from both Key limes as well as Persian limes, demand and supply were in harmony.

Currently, the Mexican distilled lime oil supply chain is having trouble finding its footing. Industrial fruit prices have skyrocketed to almost double the prices in Peru. The demand for dry peel as well as the essential oil plunged. It is only juice that remains unwavering in these volatile situations. Information from the Michoacán region points towards a sharp drop in volumes. Smaller processors are facing difficulty in procuring fruit for processing even as the larger players consume the limited stock. The veiled implications and dilemma that arise with these developments are worrying. Will these contributing revenue streams of juice, dry peel, and essential oil complement each other and become more sustainable? Is there a pattern of subtle and gradual decline in the light of this fluctuating supply and demand change? Being under the impression that demand has slackened, will growers opt out of planting limes? Whether this is a temporary state of affairs brought about by a correction in supply chain inventories or not, the market is shrouded in uncertainty. Naturally, all stakeholders in the supply chain are concerned. Forecast yields for this season are lower than 2018, the reason being the fact that the trees are past their prime. In addition, thrips that damage and scar fruit continue to pose a threat to healthy crops; though it does not seem that there is any reduction in crop size so far.

The market is gearing up for a normal crop season in 2019 with approximately 350,000 MT of fruit for processing. The fresh fruit market still commands the lion's share of fruit, almost 90%, and continues to exert pressure on the industry. This year Michoacán lime production has shot up by an impressive margin of more than 60%; from 711,000 MT to more than 1,300,000 MT obtained from about 64,000 hectares devoted to this crop.

The demand for distilled lime oil has seen a slowdown for the last two years as a result of stock re-adjustment in the market. This year however, the signs are quite positive and seem to be gaining some strength in the first quarter. The price for the oil is more stable than the fluctuations seen last year. Though the supply and demand scenario in the second half of 2019 will influence the price trend, the demand for CP lime oil is looking to be stable. Consequently, prices too are expected to be firm throughout the year. Distilled lime oil with the beautiful green colour is best produced during the early and high season. It is advised that those with a large requirement book their orders since it might be difficult to find this oil later.

#### 📥 USD 35.00 /kilo



#### **BLUE TANSY OIL**

Tanacetum annuum 🛛 🚱 Morocco

A couple of years ago blue tansy was known to command an astronomical price of USD1,600/kg. Since then, due to oil offers being bigger than the demand, prices have plunged to almost one fourth from before. Most of the producers are regretting their decision to plant blue tansy and are now suffering losses. Naturally, they are contemplating a stop in production; sentiments in the market indicate a price rise at some point this year.

📥 USD 305.00 /kilo

#### **NEROLI OIL**

#### Citrus aurantium 🛛 🚱 Morocco

This year Moroccan farmers are facing deficient rains. Depending on the temperatures of the coming weeks, there is not much to write home about. Production is set to be average compared to other years. On a parallel track, the market is looking forward to increased volumes since this year there are more producers, and projects launched seven years ago are expected to contribute to the yield. These two phenomena together have the potential to balance prices and bring about a stability compared to last year; or at the most a slight decrease.

📥 USD 6120.00 /kilo

#### **ROSEMARY OIL**

#### 

May to November is the ideal harvesting season for rosemary. Each year the bustle commences in May but before that things are rather quiet. The tenders open in April and there are five to seven lots as opposed to the thirty or thirty five that used to be launched earlier. The yield from biomass to leaves is around 25%-33% depending on the time of the harvest. The demand for rosemary leaf continues to escalate due to antioxidants extraction since most of the essential oil production is carried out on the "waste" resulting from sifting the biomass.

📥 USD 52.00 /kilo



#### **MANUKA OIL**

#### Leptospermum scoparium 🛛 🚱 New Zealand

Considerable efforts have been made to expand production and plantations now cover approximately 300 hectares. Continuous efforts towards building a sustainable supply of New Zealand manuka oil have borne fruit including employing and empowering local people from the indigenous communities. Our local partners, New Zealand Manuka Group experts and independent advisors have been able to make a difference in these areas of poverty by empowering and upskilling the locals, with their technical advisors working alongside Maori landowners. New Zealand is the world's leading producer of manuka oil and as its leader, is striving to encourage research and development of the genetics of the manuka plant in order to ensure high beta-triketone content. Extensive work is also being undertaken to create manuka oil as a more sustainable product to satisfy the demand for this highly efficacious oil.

The last year witnessed copious rainfall; both cultivated plantations as well as the wild harvesting operations were affected. This has lead to the adjustment of plantation harvest times in such a manner as to avoid the wet rainy seasons. This year marks another milestone as one of the largest plantations of our partner will be coming into its second harvest in the coming two months. Indications from wild harvest operations are also favourable, and recording a steady increase. In addition, new partnerships with landowners are being explored, alongside investments in sophisticated infrastructure.

AUD 995.00 /kilo Min 25 beta-triketone AUD 845.00 /kilo Min 20 beta-triketone

#### **ARTEMISIA TAURICA OIL**

#### Artemisia taurica

RUSSIA

This year production is pegged at very low levels since the absence of adequate rainfall has severely impacted the crop.

A NA

#### **CLARY SAGE OIL**

Salvia sclarea L.

Production was disheartening; and the quality is considerably sub-standard.

However, the excellent French crop quite reasonably offsets the depressing performance of Russian clary sage.

📥 USD 150.00 /kilo

#### **CORIANDER HERB OIL**

#### Coriandrum sativum L.

The crop fell short of expectations, but there is still carry over stock available from last season.

LUSD 90.00 /kilo

#### **CORIANDER SEED OIL**

#### Coriandrum sativum L.

Carryover stocks are still available. Due to bad weather conditions, this year's crop was quite distressing. The low prices of 2017 impacted the farmers' willingness to plant; this year they planted less than before. As a result prices from origin shot up by almost 50%

📥 USD 40.00 /kilo





#### **DILL WEED OIL**

#### Anethum graveolens L.

The weather conditions were unfavourable and the crop did not live up to expectations. However, this is offset by the good USA crop.

📥 USD 38.00 /kilo

#### **FIR NEEDLE OIL**

#### Abies sibirica Ledeb.

There are adequate supplies in the market.

LUSD 37.00 /kilo

#### LAVENDER OIL

#### Lavandula angustifolia

A severely affected crop led to a drastic increase in prices of Russian lavender oil.

LUSD 90.00 /kilo

Summer garden in St. Petersburg Russia.

#### SOUTH AFRICA



#### **EUCALYPTUS SMITHII OIL**

#### Eucalyptus smithii 🛛 🕲 South Africa

*E. Smithii* has slowly and steadily nudged its way as a favoured substitute for other eucalyptus oils that face erratic supply issues. The demand for this oil continues to be on an upward trend, and is in short supply. Prices have seen a phenomenal rise in the last two years. However, currently with adequate available material, prices are expected to remain steady at this stage.

USD 18.00 /kilo crude 70%
 USD 20.00 /kilo rect 80%
 USD 22.00 /kilo rect 90%



#### **ROSE GERANIUM OIL**

#### Pelargonium graveolens 🛛 🔇 South Africa

2018 witnessed an increase in plantings and these will now bear fruit. The market is confident about the availability of additional material this year; but even this is expected to be limited. Reports of further crop trials in several different parts of the country have filtered in. As a result, there will be a marked increase in the annual supply but this is only an incremental hike at this stage. There is no change in the prices for this oil as compared to last year's rates.

📥 USD 255.00 /kilo



#### **LEMON OIL**

#### Citrus limon (L.) Burm. F. South Africa

South Africa has seen a rise in lemon cultivation and this has produced the desired result – an encouraging increase in lemon production. Though a large proportion of the country's newer orchards are still not in production, planting has continued, and total lemon production has soared. Compared to last year, this year South Africa has more than doubled its lemon crop to touch 473,000 MT. The prices for lemon, however, are rather weak.

📥 USD 18.00 /kilo



#### TAGETES OIL

Tagetes erecta 🛛 🕲 South Africa

A robust supply is on the cards for tagetes oil in 2019. The demand has been consistent and is on an even keel with essential oil supply. No shortages are anticipated this season and prices are expected to hold their position in the coming months.

📥 USD 175.00 /kilo



#### **MARULA OIL**

#### Sclerocarya birrea South Africa

The 2019 season opened on a positive note with adequate availability of material. The hair and skin care industries have made breakthroughs with new applications of marula oil. This has fuelled a healthy demand and it is on the rise. Market watchers predict a slight surge in prices this year as input costs of production have also risen somewhat.

📥 USD 45.00 /kilo



#### **TEA TREE OIL**

#### Melaleuca alternifolia 🛛 🚱 South Africa

In the global scenario, this oil commands a healthy demand. Market predictions point to an anticipated product shortage in 2019, especially for the organic material. But, there has been news of extensive plantings this year; and it is hoped that this will help tide over the projected shortage over the next couple of years.

📥 USD 47.00 /kilo



#### **BUCHU OIL**

#### Agathosma betulina 🛛 🛇 South Africa

2018 has not augured well for South African farmers. Severe wild fires and droughts have been the plague of the 2018 buchu crop. Supplies plunged drastically by over 50%, accompanied by a corresponding dramatic price hike. 2019 brings hope in terms of near-normal availability and easing of prices. In the face of unpredictability, it is always wise to cover any imminent requirements.

#### 📥 NA

When Spain comes up with its lemon crop, the world makes a beeline to purchase the choicest fruit. Spain reigns as the world's leading producer of quality lemon for fresh fruit consumption; and second in fruit processing. Likewise, oranges from Spain are coveted globally for their superior quality, and high aldehyde containing essential oils. Another unique Spanish product that has made its place in the world commodity market is the clementine; highly valued in the aroma industry for its sweetness. In fact, aromatic plants account for over 14,300 hectares of fertile farmland in Spain, 6% up on the previous year, and almost 30% more than in 2015. The years 2017 and 2018 witnessed a series of events, accidents, and new environmental policies, which influenced the market to a great extent.

#### **SPANISH SAGE OIL**

#### Salvia lavandulaefolia 🛛 Spain

The crop in the current year was advanced in comparison with the previous year. The harvest started in August, and finished in September. The yield has been satisfactory, with an average yield of 40 kg/hectare. Prices remain stable as does demand.

📥 NA

#### **RED THYME OIL**

#### Thymus vulgaris 🛛 Spain

2019 has fared well for red thyme and the crop is predicted to be a strong one this season.

📥 Euro 82.00 /kilo

#### **ROSEMARY OIL**

#### Rosmarinus officinalis 🛛 Spain

Rosemary commands expectations of a strong harvest and prices.

📥 Euro 53.00 /kilo



#### **ORANGE OIL**

#### Citrus sinensis 🛛 🚱 Spain

The Spanish orange oil market has witnessed a lot of turmoil in the recent past. The *"Per la defensa de la nostra citricultura"* i.e. "Defending our own citrus sector" movement gained momentum until last April; about four thousand farmers and growers of oranges participated in a street protest in Valencia. The objective of the demonstration was to highlight the plight of indigenous Valencia farmers and call for effective measures to counter the crisis in the industry. Many of the recent trade treaties between the EU and third party countries are to the advantage of the outsider nation. The resultant influx of cheaper citrus fruits into the EU has created instability in terms of stiff competition; and all but displaced the local Valencia production. The protesting farmers have also initiated a signature campaign and will petition the highest representatives of the Spanish and European administrations. A manifesto presented at the end of the demonstration appealed to the government and public authorities to reconsider the situation and reassess priorities. It puts forth some points for consideration covering such aspects as direct aid and compensation to citrus growers; a review of external EU agreements; improved labelling; enforcement of quality, phytosanitary, labour, environmental and safety standards and checks.

📥 Euro 7.00 /kilo

#### **LEMON OIL**

#### Citrus limon L. Burm. F. 🛛 🚱 Spain

AlLIMPO's third lemon harvest estimate for the 2018-19 season endorses the initial prediction published in September 2018. It outlines an estimated total crop of 1,300,000 MT with a marginal increase in Fino lemon and Verna lemon showing recovery in volume. The farmers and stakeholders are euphoric, as this literally cements Spain's *numero uno* position as the top supplier in Europe. Touted by far as the biggest crop in the last decade with typically 200,000 MT earmarked for processing. This was not the case at the beginning of the season. During the period October to December 2018, Spain lost much of its ground in the fresh fruit market due to aggressive pricing by competing nations such as Turkey and South Africa. The knock-on effect of this was that the volumes normally destined for fresh fruit and processing markets plunged by a significant 20%, as much of the fruit was left unpicked. This reiterates the challenges faced by the processing industry in a sector that is slave to the dictates of the fresh fruit market. Despite the fact that the largest volumes are processed between January and May, the processing industry is now hoping to recover a percentage of their losses in 2019. This is largely dependent on prices of fresh fruit in the market, and influenced by price pressures from both Turkey and South Africa.

The dry peel market is still in the middle of a problematic situation on the global front. On the one hand, processors are putting their efforts into procuring stock even as prices are bottoming out. On a positive note, the members of fresh fruit production and industrial processing have united under the aegis of Ailimpo for a better understanding and handling of market dynamics that affect them. They are also putting their combined efforts to etching out the best strategy that will enable Spain retain its crown as a leading lemon producer and supplier of associated lemon products in the global arena. Among the many discussions, one important topic under deliberation is reaching a mutually beneficial arrangement for supplying more fruit directly to the processing industry. However, experts believe that this will take up to two years to find fruition and implement.

#### 📥 Euro 17.00 /kilo

Countries	May 2014/15	May 2015/16	May 2016/17	May 2017/18	Forecast 2018/19
Spain	1,089,000	775,800	995,000	928,000	1,300,000
Italy	429,000	394,000	447,000	435,000	400,000
Greece	55,700	68,200	68,829	85,003	85,000
Portugal	13,000	16,000	16,000	16,000	16,000
Cyprus	11,000	15,000	8,000	8,000	8,000
Total Production	1,597,700	1,269,000	1,534,829	1,472,003	1,809,000

#### EUROPEAN UNION-ESTIMATED LEMON PRODUCTION (MT)



### THE FUTURE OF FRAGRANCE FARMING: INSTAGRAMMABLE, CIRCULAR AND IN THE CLOUD

#### Eddie Bulliqi

Summary: Consumer fragrance culture is shape-shifting at a faster rate than ever before, recruiting increasingly diverse and open-minded users who are being catered for by new business models, communication tactics and scent profiles. This article proposes how current trends may affect the future of fragrance farming.

The fate of perfumery plant farming is certainly not a separate issue to the future of fragrance development itself – technological advancements and creative zeitgeists within the houses and brands will no doubt push and pull the focus and output of farmers via intensifying consumer appetite for transparency and a closer connection to products' sources. With the back-end of the supply chain facing brighter spotlight (and scrutiny) than ever before, indications suggest that the farmer of tomorrow will gain considerable power, influence and licence within the purchasing ecosystem.

As a result, the evolution of fragrance agriculture will rely on shrewd integration of digital initiatives and authentic policy-making that listens more closely to end-user desires than is customary today as well as louder voices from cooperatives and partnerships across the sector that boldly elucidate what quality means, how to achieve it, and why paying more for it can benefit all those involved in production. This genre of strategy, promoting the humanistic value of the industry and championing efficiency, will be critical in alleviating valid anxieties over global land mismanagement and climate change doomsdays. Given that the world's population is expected to reach 9.1 billion by 2050 (up from 7.4 billion in 2016), and current predictions that farmers must increase food production by 70 percent compared to 2007 levels to balance birth rates, governments will be much stricter on land use legislation in an attempt to maximise agriculture's output and increase its global GDP from the 3 percent it sits at today.<sup>1</sup>

To stay ahead of the curve, and ensure industry innovation moves faster than civic regulation, we make three fragrance trend predictions and review their potential effects on the future of perfumery plant farming.

#### **PREDICTION #1: SOURCE CULTURE GAINS GROUND**

Transparency of material derivation and humility in execution were two of the key philosophies that anchored niche perfumery's genesis, presenting juices that were intended to give consumers a more intimate understanding of their construction through simple (often solinote) accords and championing key materials umbrellaed under modest storylines. As this trope developed from the 1980s to today, the buck has been pushed further and further down the supply chain, apexing in new brands such as London-based Ostens who showcase 'Préparations' – single oil compositions marked with the country of origin, supplier and concentration on each bottle. With cynicism towards institutional knowledge only growing across all cultural spectrums, and the craft movement still on the rise, it is likely that public interest in the originary sources of products, materials and ideas will result in ever-more brands that put the farmer at the heart of their offerings and marketing.

#### **EFFECT #1: FARMERS WIN POWER AND SPOTLIGHT**

A sensible assumption would be that farming operations and the companies tied closely to them will therefore gain greater public recognition and sway over what shape their products end up in on the shelves and in negotiations. If the craft and know-how of traditional farming is valued higher than big industry then, in the era of Instagram-reporting, farms may also come under higher demands for consumable, intimate content to satisfy end users whose purchase was as much governed by the ideals of happy sun-kissed gardeners as genuinely doing good in local communities.

The flower industry presents a relevant parallel, overcoming recent falls in trade by focusing "on the DIY aspect ... by zeroing in on the experience, turning the customer into a creator, not just a mindless consumer. A creator who posts their work on Instagram", in the words of journalist Katy Kelleher.<sup>II</sup> By opening up harvesting sites in the same way that many flower fields attract amateur photographers, perfume agriculture would be able to retain the same sentiment of being "tactile ... of creating and making something" that Brigid Stevens, VP of flower retailer The Bouqs, believes makes their products so special.<sup>III</sup> Furthermore, a transformation of farming sites into 'inspiration hubs', giving insight into the beauty of both natural and human processes in the product lifecycle by allowing the public greater access, would ensure farmers are at the forefront of people's mind when discussing craft, skill and quality in the fragrance industry.



Aspirations of optimising public appreciation for local on-farm skills face a roadblock when reviewing current macro-trends in farm ownership. Writer Sara Wyant tells us that in the USA "since the 1930s, the number of farms has declined, the average size has increased, and the amount of farmland in agriculture has remained generally flat. Of the 2.1 million farms in the last Census of Agriculture, only about 15 percent are at-scale production farms, and they control 80 percent of the acres", confirmed by Brett Sciotto, CEO of Aimpoint Research, later in the same article through his prediction that "by 2040, 5 percent of farms will produce more than 75 percent of the agricultural output ... Mid-size farms are under the most financial pressure and are declining the quickest as they get bought up by larger operations".

In Sciotto's opinion, "the farmer seems to be losing more and more control" despite the fact that the US has seen a 61 percent increase in small farms from 1992 to 2012, echoed by David Widmar, agricultural economist at Purdue University, through his concern that "for the first time, growers who are older than 65 outnumber farmers who are younger than 45 ... When older growers exit the business, there are fewer younger growers to replace them. As a result, farm consolidation will be significant and quick. The consolidation will change farm dynamics to larger, more managerial complexities".<sup>v</sup> Perhaps a more socially minded, digitally actioned communications strategy that treats farms as store fronts, akin to the way consumer-facing brands present themselves to the public, can save mid and small-size plots from consolidation and create a new USP (unique selling point) that larger corporates will not be able to compete with.

#### **PREDICTION #2: SUSTAINABILITY BECOMES A REQUIREMENT NOT A CHOICE**

What is clear from the explosion of new companies in fashion, beauty, food and design that are experimenting with innovative ways to minimise environmental impact is that sustainability matters to today's consumer base. The obvious next step, evident in Gen Z buying patterns in particular, is a growing consumer demographic that will actively not buy from brands that do not transparently demonstrate their commitment to eco-friendly processes and goals. Whilst perfumery has been slow to catch on due to a complicated supply chain, new brand Sana Jardin is a best-in-class example, describing itself as 'the world's first socially conscious, luxury fragrance house' and flagshipping 'The Orange Blossom Project' with agency Nest to help fund training, recycling and business strategy for low-income female farmers in north-west Morocco. Expect sustainability to be a requirement in the future, not just for governments but for consumers, too.

#### **EFFECT #2: GROSS OUTPUT STABILISES, PROFIT MARGINS INCREASE**

Not just about 'doing good' anymore, being sustainable will also be advantageous for winning new business and retaining clients. In corroboration, world leaders in patchouli production Van Aroma commented that

one of the increasingly important aspects of our product for buyers is for it to be traceable and sustainably sourced. Our partners are becoming increasingly conscious about where naturals come from, who they affect, and if the impact is a positive one or not. This is a move towards progress overall, as it has pushed our industry from being one of simple commodity trade to one where there is a genuine interest in understanding and impacting society.

That said, implementing sustainability changes, especially for the first time within an organisation, is never easy and can encounter multiple roadblocks. Aaron Pollack, CEO of Golden Grove Naturals in Australia, identifies three main themes that inhibit agricultural enterprises from being more forthcoming in their sustainability initiatives: "money ... the costs to undertake practical research and development; equipment and techniques ... as emerging technology can also be costly to establish and slow to transfer to our industry; and commitment and support given that large global businesses often talk of sustainable practices yet often implement restrictive procedures and strict financial terms". With further evidence, the Co-founder of the New York-based National Young Farmers Associations Lindsey Lusher Shute believes that

one of the most difficult issues for our farmers is land ownership. Without land ownership very few of them can make investments into farm infrastructure and conservation that could adequately address the global crisis of biodiversity ... First and foremost, farmers need to own land. After that, they need low-interest loans or grants to support the cost and a consumer who is willing to pay a little more for [products] grown with practices that support a healthy ecosystem<sup>vi</sup>



# **66** A good farmer has got to be a good risk manager ... this monoculture agriculture that we tend to have had is so vulnerable to weather changes and climate and pests".

Another big fear in changing to more sustainable processes, including going organic, investing in biodiversity, and recycling resources, lies in the potential for system costs to outweigh financial gains, even once established. Whilst gross output may stay steady or even experience a slight decline before best practices are learnt, profit under sustainability initiatives has the potential to dramatically increase given the premium that society is willing to pay for fully traceable, earnest, chemical-free products. South Dakota farmer Will Ortman's story of shifting to organic is exemplary, with the farmer concluding that "after pushing the numbers on this organic was going to work better economically because of the organic price premiums. This wasn't rooted in some kind of dream or wish or some philosophy; it really did start with economics".<sup>vii</sup> A large part of his success also lay in promoting biodiversity for soil enrichment, Ortman adding that, for him, biodiversity is "exactly like a stock portfolio", an idea echoed by Dan Glickman, US Secretary of Agriculture 1995 – 2001, in a 2017 interview with his statement that "a good farmer has got to be a good risk manager ... this monoculture agriculture that we tend to have had is so vulnerable to weather changes and climate and pests".<sup>viii</sup>

Whilst the inevitable shift to sustainability policies may at first appear daunting, agricultural policy experts Daniel Moss and Mark Bittman reminded us in a New York Times article published last year that "it's [agriculture is] an industry that would have us believe that we need rocket science to grow a carrot. Agroecology isn't rocket science. It simply takes full advantage of nature's assets, drawn from the farm itself and surrounding ecosystems."<sup>III</sup> In accordance, agricultural researchers Colin Anderson and Michel Pimbert believe that agroecological innovations are the solution to the sustainability problem, "promot[ing] circular systems that involve recycling, reuse and combining resources to reduce dependency on external inputs, in particular fossil fuels. They mimic natural cycles and the functional diversity of natural ecosystems" whilst crucially using lost-cost or free natural materials in and around farms that allow for inexpensive autonomous action and do not involve high tech.<sup>×</sup>

#### **PREDICTION #3: AVANT-GARDE PERFUMES BECOME MAINSTREAM**

The willingness to include unusual accords, accents and signatures in fine fragrance development over the past decade was a response to a generation that not only placed higher value on sensory experiences but also was obsessed with uniqueness and curating personal creativity, successfully exploited by brands such as Le Labo and Byredo. Whereas luxury in the past was signified by blemish-free uniformity, the luxury of tomorrow will expand on today's lust for craft culture by celebrating the oddities, individuality and strangeness within both individual essential oils and finished scents, revering distinct and away-from-the-norm oil profiles in the same manner as genres of wine.

#### **EFFECT #3: AGRONOMICAL STRATEGY DRIVEN BY TECH, MANAGED BY PEOPLE**

Within this context, growers should aim to find a USP within the odour profile of their oil and maximise it to the greatest possible extent via agronomic manipulation to achieve a product with real personality. There is no doubt that smart technology will be part of the solution to emphasise distinct essential oil odour profiles more clearly by optimising growing conditions for desired olfactory effects. Pollack agrees that "the future of farming will include a lot of technology to undertake diagnostics and data collection such as the use of drones and robotics to data mine the soil, water and plant health for instant analytical infield results" that could exponentially benefit on-site practice as more and more data are collected over the years, with plant-by-plant nanosensors sending live information to farmers' smart phones, saving time and money.

For The Economist's Geoffrey Carr, "the job of smart farming, then, is twofold. One is to measure the variables going into the matrix as accurately as is cost-effective. The other is to relieve the farmer of as much of the burden of processing the matrix as he is comfortable with ceding to a machine", leaving time to potentially focus on more experimental agronomic projects and sustainability ventures.<sup>xi</sup> Many are banking on a new form of smart agriculture to stimulate growth; according to a Bank of America Merrill Lynch Global Research report, the agricultural drone industry is predicted to generate 100,000 jobs in the U.S. and \$82 billion in economic activity over the next 10 years.<sup>xii</sup> However, Pollack is doubtful that we are about to fall into The Matrix: "I am uncertain about whether or not the widespread uptake of technology will minimise the workforce. Farmers and gardeners often speak of the meditative aspect of working closely with nature, soil, water and plants. I would not be surprised if there is a push-back on the continual incorporation of technology over the next 200 years. Farming could be used to maintain an active workforce as populations continue to increase". Along a similar vein, and in antithesis to the hype surrounding digital integration on farmland, Jim Hughes from Virginia-based technology firm Commonwealth Computer Research suggests that "data analytics-powered farming has a lot of potential ... but we don't know yet if it will help us farm 5 or 50 percent better".<sup>xiii</sup>





Even if robot swarms and cloud brains do have a noticeable effect on the cosmetics of farming sites over the next century, it is important to remember that perfumery plants are not the same as food crops and not nearly as much can be mechanised, not forgetting that the concepts of quality, taste and balance in scent are not driven by necessity but by the subjective emotions inherent to identity projection, meaning people will likely be at the heart of fragrance agriculture for a long time. In addition, whilst human input may not be required for the interpretation of digital data, it is most certainly needed in the most human aspect of decision-making – implementation. How, when and why practices are changed, such as shifting to circular sustainability frameworks, will not be made by machines but by people. First and foremost, what the industry really needs right now is more agronomy students becoming experts in niche fields to drive focused innovation and expand on the little literature available on perfumery plant lifecycles and how to manipulate them.

Providing an optimistic outlook, Syngenta reports that "the United States Department of Agriculture now lists another 140 sustainable agriculture offerings at colleges and universities across the U.S. - including online courses, post-grad classes, certificates and workshops ... a reflection of increasing millennial interest in building healthier and more holistic ... systems", whilst Sara Wyant notes that the "USDA says nearly 69 percent of young farmers will have college degrees".xiv Perhaps one answer is to have more machines calling the shots on what we do in the soil, but run farms a little bit like the R&D centres at experimental restaurants such as the famous elBulli that stood in Catalonia or Mugaritz in San Sebastian, ensuring any jobs compromised by artificial intelligence are reassigned creative roles dedicated to sustainability, marketing and social inclusion, Instagramming about the next big trends in essential oils, working alongside guest researchers and encouraging consumers to visit the site to experience first-hand the time, love and craftsmanship inherent to essential oil production.

- vii. Quartz on Youtube, 'Future of Food: Farming in the age of climate change', https://www.youtube.com/watch?v=Tjr6z1GMDqc
- viii. Ibid.

xii. Karen McMahon for Syngenta, Ibid.

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ix. Daniel Moss and Mark Bittman for The New York Times, 'Bringing Farming Back to Nature', https://www.nytimes.com/2018/06/26/opinion/farmingorganic-nature-movement.html

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xi. Geoffrey Carr for The Economist, The Future Of Agriculture', https://www.economist.com/node/21698612/help/accessibilitypolicy

xiii. Deborah Huso for My Farm Life, 'The Farm Fantastic', https://myfarmlife.com/equipment/the-farm-fantastic/

xiv. Syngenta for The New York Times, 'Is Digital Farming The Key To Sustainable Agriculture?', https://www.nytimes.com/paidpost/syngenta/ is-digital-farmingthe-key-to-sustainable-agriculture.html; Sara Wyant for AG Week, Ibid.

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11

## THE SRI LANKAN COLLECTION

Extreme aridity continues to plague the Sri Lankan farmers. While expectations were riding high on the clove and nutmeg crops harvested at the end of year 2018 and early 2019, the clove crop turned out to be a disappointment.

The US dollar remains strong against the Sri Lankan rupee; and uncertainty in western markets has resulted in sluggish activity. While there has been a perceivable appreciation from its nadir, an all-time low rate of 184LKR/USD in December 2018, the current exchange rate is at a 20% depreciation relative to the exchange rate prevailing in January 2018. The backdrop of a persisting face-off between the USA and China in terms of trade, and ongoing political turmoil in Europe, resulted in a marked slow-down of commodity trading in the fourth quarter of 2018. The situation has spilled into the first quarter of 2019, affecting several markets including the essential oils sector.



#### CINNAMON BARK OIL OS Sri Lanka

#### Cinnamomum Zeylanicum

The rains have started in Sri Lanka and so has the cinnamon peeling. The dry climatic conditions during the month of January through to March interrupt cinnamon peeling as it becomes difficult to remove the inner bark from the wood. There is usually a slight decline in raw material availability during this time; and now the products will make their way into the market, albeit slowly. Most of the experienced distillers are prepared for this and maintain large stocks of oil in reserve for this annual period of limited raw material availability. The season for cinnamon bark oil is set to commence from mid June. Powdered cinnamon has seen a spurt in popularity with increased usage in several industrial applications. As a result, at present the demand for raw materials is pretty steep. At the moment, prices are holding their positions given the exchange rate favouring overseas buyers as well as stability in global essential oil demand. As of May 2019, raw material availability continued to be an issue, till the monsoons hit, and peeling started. It is advisable to buy if immediate requirements exist.

📥 USD 205.00 /kilo

#### **CINNAMON LEAF OIL** Sri Lanka

#### Cinnamomum zeylanicum

Likewise for cinnamon leaf oil, the season begins mid-June. Cinnamon peeling has somewhat curbed the supply of the requisite amount of cinnamon leaves for distilling. However, because of lower than usual demand since December 2018 and restricted production, cinnamon leaf oil prices maintain their low price points.

LUSD 15.00 /kilo

#### CITRONELLA OIL OSri Lanka

#### Cymbopogon winterianus

Citronella oil enjoys a stable market scenario. Adequate supplies are available since production takes place every four months and there are no issues with the crop or the harvest. The dry weather has been conducive to citronella production, but aridity is not beneficial for re-growth of grasses. Prices have inched up somewhat since the last quarter but remain unwavering in their position. The oil from Java continues to remain competitive; however the demand for the Sri Lankan material is observed to be increasing in the quarter. Prices are not expected to fluctuate significantly in the near future.

📥 USD 24.00 /kilo



#### CLOVE BUD OIL OSri Lanka

#### Eugenia caryophyllata

Clove crops harvested at the end of 2018 were below expectations. As a result, raw material availability is also strained and exerting pressure on raw material prices. There is no way that Sri Lankan clove bud oil prices can close the gap and be at par with the rates commanded by the Indonesian competition.

#### **CLOVE STEM OIL** Sri Lanka

#### Eugenia caryophyllata

The crop for December 2018 was below the prospective figures with negligible price correction for clove stems. Therefore, it is safe to assume that there will be no amendments to the price levels for clove stem oil.

📥 USD 30.00 /kilo

#### NUTMEG OIL Sri Lanka

#### Myristica fragrans Houtt.

More than sufficient stocks of raw materials are available from the year-end harvest of the last quarter. Local market prices are predicted to remain low in view of the profusion of raw materials and stiff competition from Indonesia.

📥 USD 45.00 /kilo

#### TUNISIA



#### **NEROLI OIL**

#### Citrus aurantium 🛛 🕲 Tunisia

It is almost the close of the harvest season for neroli, and prospects look bright. Ideal growing conditions and good rainfall in the last few months have contributed to an abundance of flowering plants. Initial reports are very encouraging and market sentiments are buoyant. 2019 is expected to deliver an exceptional harvest.

📥 Euro 6250.00 /kilo



#### **ROSEMARY OIL**

#### Rosmarinus officinalis 🛛 🔇 Tunisia

Availability of rosemary oil continues to be an issue. Its antioxidant properties have made it extremely popular; and recent harvests in Morocco and Tunisia have not been able to keep up with the increasing demand. Good quality oil will continue to be an elusive commodity.

📥 Euro 54.00 /kilo



#### **NIGELLA SEED OIL**

Nigella sativa 🛛 🕄 Turkey

Initial reports from Antalya in Turkey predict the expected quantity of cold pressed oil of nigella seed to be at 20 MT. This oil contains 54.72% concentrate of linoleic acid and 24.45% oleic acid. It is harvested during the months of July and August.

📥 Euro 18.00 /kilo

#### **ORGANIC JUNIPER BERRY OIL**

#### Juniperus communis 🛛 🛇 Turkey

With a concentrate of 90% alpha-pinene, the ideal harvesting time is from late December through March. Proper ripening of the berries is dependent largely on the weather, the slightly lower temperatures being pivotal for the ripening. This year, the quantities of available material in season are set to soar to 1,000 kilos.

📥 Euro 119.00 /kilo

#### **ORGANIC LAUREL LEAF OIL**

#### Laurus nobillis L. ③ Turkey

With the cineole-1.8 content ranging from 55-59%, laurel leaves are harvested in late September and continues till the colder temperatures of January. Under normal market conditions, the weather plays a critical role in the easy availability of raw material of this product. The predicted crop report put the figures at 3 MT, up from last time's figures.

📥 Euro 121.00 /kilo

#### **ORGANIC ORIGANUM MAJORANA OIL**

Origanum marjorana L. 🔇 Turkey

This essential oil is the material containing 70%-75% carvacrol and 6%-7% linalool ct. The harvest season is set to commence in June and continues till September. This year, market pundits are pegging the available quantity at 2 MT.

📥 Euro 139.00 /kilo

#### **ORGANIC SWEET ORIGANUM MAJORANA OIL**

#### Origanum marjorana L. 🔇 Turkey

This oil with 67% linalool and 24% carvacrol is harvested from June to September. The crop is up to an expected quantity availability of 1 MT.

📥 Euro 127.00 /kilo

#### **ORIGANUM VULGARE OIL**

**Origanum vulgare** S Turkey

Organic oregano oil containing 70%-75% carvacrol and 4%-5% linalool is harvested from July through till October. Reports from the warehouses are good; the estimates put the improved output figures at 20 MT.

For the conventional variety with 70-75% carvacrol and 5-6% linalool, expectations are up and figures are pegged at 20 MT in season.

📥 Euro 128.00 /kilo



### MINTY MOMENTS DIVE INTO THE MINT STORY

The sun's in its element, and it's the time to reach out for that mint-laced summer drink or health-boosting salads. Have you ever wondered what gives them their shivery fresh piquancy? Yes, it's those little green, crunchy mint leaves that really hit the spot and are popular the world over for their refreshing aroma and cooling sensation. Today we retrace mint's steps from the shelf back to the soil.

Mint oil is generally not available off the shelves but you'll find it everywhere and it's one of the world's most popular flavours. Almost everything on the supermarket shelves, from dentifrices and oral care, dermal and cosmetic products, confectionery, desserts, chocolates, perfumes and aromatherapy ingredients, and sometimes even household cleaners, contain mint oil.

Mint taxonomy is highly complex and, most often, there is no consensus on the 600 different kinds from the *Labiatae* plant family. However, everyone unanimously agrees that abounding anti-microbial, antiviral properties, and its countless benefits promote body, mind and overall wellness. It also works as a pain reliever, strong antioxidant, anti-allergenic, and displays anti-tumour and chemopreventive behaviour. Several pharmacopoeias of European and Asian cultures mention mint and its benefits. The flowers, leaves, and even stems have widespread use as herbal infusions and fresh culinary herbs. Commercially produced mint oil comprises two primary varieties, *Mentha piperita* and *Mentha arvensis*. Mint oil from *M.piperita* is usually regarded as the "true" peppermint oil, **and unless specifically stated, this is the oil that is discussed in more detail below.** Meanwhile, mint oil from *M.arvensis* is more commonly referred to as cornmint or *M.arvensis* oil. India dominates production of cornmint oil, with annual output invariably in excess of 30,000 tonnes. A large proportion of the crude mint oil from *M.arvensis* is further processed into menthol crystals and dementholised mint oil. Spearmint oil as we know it, refers to two distinct commercial varieties, *Mentha spicata* or native spearmint and *Mentha cardiaca* or Scotch spearmint.

FEATURE

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#### THE USA PERSPECTIVE

The USA commands the lion's share (over 60%) of the world's peppermint and spearmint oil production. The USA produced annually almost 2,500 MT of *Mentha piperita* (peppermint) in 2017 and 2018, and 670 MT of *Mentha spicata* (native spearmint) and 345 MT of *Mentha cardiaca* (Scotch spearmint) in 2018. India and China are the other major producers, with India averaging approximately 400 to 500 MT in the last two years. No figures are available for the total China production. Other smaller producers include Japan, Canada, Australia/ Tasmania, and parts of Europe and Africa.

An IFEAT study tour to the Pacific Northwest and Midwest plantations in 2016 was an eye-opener for the dominant peppermint and spearmint oils. Close cousins and similar in composition, these two oils differ in their varying odour profiles. Peppermint's main constituent component is 38% to 50% menthol. Spearmint sees a high carvone content of 60% to 70% with limonene at 8% to 16%.

The USA boasts over 230 mint growers, the average farms can spread from 15 acres / 6 hectares to over 2,000 acres / 809 hectares. Yakima, Idaho, Willamette Valley, LaGrande in the Northwest and Wisconsin, Indiana, Illinois, Michigan in the Midwest clearly lead the growing regions contributing the major portion of peppermint oil production. The US mint harvest normally commences in late July through August and finishes in September. Each geography produces a unique oil profile due to elevation, weather patterns, soil quality, and water supply. The USA touches an average yield total of 100 lb per acre of peppermint; spearmint first cut 80 lb per acre and spearmint second cut 60 lb per acre.

Quality control is exacting and adheres to strict manufacturer specifications. Every barrel of oil is subjected to a series of complex processes and analyses for consistent quality, pesticide, contamination, solvents, adulteration, regulatory review, GMO certification, REACH review, and documentation and traceability to ensure that any foreign oils match the pre-shipment sample. Most dealers have invested in quality application laboratories.









The oil stores best in galvanized iron drums or aluminium containers, ideal for short and long term storage respectively. These, like most essential oils, are stored in a cool and dark place away from sunlight.

#### DISTILLATION

On average, around 0.5 to 0.8% of essential oil is recovered from the herb. The ambercoloured liquid is obtained after herbage is subjected to steam distillation for 2 to 2.5 hours for complete recovery of the oil. Steam from boilers fuelled by natural gas or propane is forced through the leaves at various temperatures and pressures. Consequently, steam condenses, carrying the oil. The receiving condenser, kept cool by constant cold-water circulation, facilitates the condensation of the oil and water mixture. The varying densities of water and oil are clear distinguishers; the oil is skimmed off and collected while water sinks to the bottom.

#### HARVESTING

Mint leaves are cut into windrows and shade-dried for about a day before distillation, care being taken to avoid decomposition. A wilted crop stored for a longer period affects volumes of oil yield. Spearmint, in general, is double cut. Only certain growing regions such as Yakima follow the two cuttings pattern for peppermint. The first cutting takes place at the end of June while the second cutting is typically in August and continues into September. The season's closure in September allows adequate time for regrowth just prior to the commencement of the winter season. When the herb attains maturity and 10% of the peppermint crop is in the flowering stage, it contains optimum (0.5 to 0.68% of oil) yield and quality. Harvesting begins on dry and sunny days, since cloudy or rainy days decrease the menthol content. A forage harvester is used to shovel sliced plants into a mobile distillation tub and transport for distillation.

#### CULTIVATION

Peppermint and spearmint are perennial plants with the average field being harvested for about five years before being rotated. The first year yields a lower amount of oil compared to the prime yielding harvests, the second, third and fourth years. Mint stolons are mechanically planted during January and February; maturing in about 100 to 120 days for the first harvest. The second cutting takes place about 80 to 90 days after the first.

*M. arvensis* requires dry soil but thrives in both tropical and sub-tropical regions with an ideal temperature of about 20 to 25°C. However, essential oil and menthol concentrations are reported to increase at higher temperatures of about 30°C. Long days with warm to hot conditions and cool nights ensures that peppermint is happy and produces just the right balance of essential oil compounds during the growing phase. Light showers at planting time and sunny days at the harvesting stage are best.





#### CHALLENGES

Drought and flooding are the bane of every grower and likewise in the USA. Another serious issue is that of the damaging fungus Verticillium wilt that threatens almost all plantations. Unfortunately, once the soil is infected treatment is difficult and expensive to treat and lasts only temporarily until the fungus thrives again.

The Mint Industry Research Council (MIRC) is an active organisation working with growers for the success of US mint. Among several projects, the main thrust is on pro-active policies and legislation; and research for natural breeding in order to cultivate Verticillium-resistant plants. It has also established a system of "registered propagators" who ensure the availability and distribution of certified planting material.

With this, though our mint story comes to an end, the story of mint is a never-ending one. Valued throughout the pages of civilization for its medicinal and psychosomatic value, even today, this peppermint pal is powerful enough to nudge you back into mint condition.



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#### **GRAPEFRUIT OIL**

#### Citrus paradisi 🛛 🕄 USA

There is a slack in demand for grapefruit oil. The industry has seen quite a high price range for this oil, especially due to the reformulation work that has been undertaken. The availability of superior quality fruit from Florida has dropped significantly, and naturally this has affected the production of the oil. The USDA's May production forecast puts the availability of white grapefruit at 780,000 boxes and that of red grapefruit at 3.8 million boxes - rather disheartening figures for the grapefruit market where the supply has been waning over the last twenty years and the fall-off is almost 90%. Grapefruit oil with very low nootkatone is available in other parts of the world. However, even this grade of oil is available in limited quantities and is constrained by lack of fresh fruit supply due to demand from the local markets. It is known that the return on investment on fresh fruit is more than that of essential oil. This, coupled with a robust demand, is the key influencer that dictates the choice of citrus fruit cultivation for growers.

▲ USD 70.00 /kilo (White) ▲ USD 40.00 /kilo (Pink)

#### USA GRAPEFRUIT PRODUCTION ('000 BOXES)

State	2016/17	2017/18	Forecast 2018/19
Florida Red	6,280	3,180	3,800
Florida White	1,480	700	780
Total Florida	7,760	3,880	4,580
California	4,400	4,000	4,000
Texas	4,800	4,800	6,300
United States	16,960	12,680	14,880







### - GLOBAL NETWORK -

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#### **LEMON OIL**

#### Citrus limon (L.) Burm. F. 🛛 🛞 USA

Globally lemon stocks are on the upswing across most markets, with demand being quite steady as it has been in the last two years. Naturally, lemon prices have slackened considerably considering the increase in supply and stable demand.

USA grows lemons around the year across the three key varieties, i.e. desert, valley, and coastal. Lemon prices have seen a decline albeit a modest one. The drop in demand holds the potential of further easing out of prices, unless bad weather in the citrus districts of California upsets the applecart. Last year witnessed a substantial fall in crop production by almost 20% due to excessively high July temperatures. Farmers were hoping to avoid this situation this year since weather predictions indicate average normal temperature. Their prayers were answered as this year's California lemon harvest volume swelled by 10%-20% compared to last year. As a result, the size of the fruit is large and the quality much superior. The USA remains a strong consumer of fresh fruit and this is the segment that is the pivotal driver for the region. The demand for the oil remains resilient and similar to last year since it is a premium quality and coveted globally. This year could prove a great equaliser since supply and demand is set to compensate and etch out price stability in the sector. Predictions for the lemon crop for the USA is said to touch 21.3 million boxes for the period 2018-2019.

📥 USD 44.00 /kilo

#### **ORANGE OIL**

#### Citrus sinensis 🛛 🕥 USA

Overall the weather in the USA growing belts, especially Florida, has been ideal and conducive to the recovery from last year's debacle of a diminished crop size. The Florida market has bounced back and consequently the first six months of the current season witnessed a steep fall of almost 30% of the Brazilian import of frozen concentrated orange juice (FCOJ).

The May estimates of the USDA puts the Florida all-orange production forecast at 72.4 million boxes. This represents a 5% decrease from the April forecast of 76.5 million boxes. This figure takes into account 30.5 million boxes of non-Valencia oranges (early, midseason, and Navel varieties), harvesting of which has been completed. With almost 70% of the harvest completed, the Valencia crop forecast is substantially lowered to 42 million boxes, some 9% lower than the April forecast.

📥 USD 6.00 /kilo

State	2016/17	2017/18	Forecast 2018/19
Florida	68,850	44,950	72,400
California	48,300	45,400	49,000
Texas	1,370	1,880	1,875
Total	118,520	92,230	123,275

#### USA ORANGE PRODUCTION AND FORECAST FOR THE 2018/2019 ("000 BOXES)

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