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Market Report September 2016



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Citrus limon (L.) Burm. F.

Heavy rains caused delays during April and May affecting the start of the season, which has put some additional pressure on both the oil and fresh fruit markets.

It was widely expected that Argentinian lemons would be exported earlier to relieve some pressure on fresh fruit supplies in Europe but the 4-5 week delay only helped push local prices in Spain up another 5-10%. According to some Argentinian processors the delays are also expected to have an impact on fruit yields with one producer suggesting as much as 10%.

Despite this minor setback there have been significant increases in production over the past 12 months and based on the most recent forecasts, as much as 2014 when Argentina had problems and prices rose significantly, now supplies are fully recovered prices have softened but not back to anything like pre-2014 levels. The reason is they don't need to. The Argentinian producers are aware of the difficulties in other lemon oil producing countries and the fact that prices in these areas are actually increasing means that Argentinian producers are in a stronger position to optimise their profits this year and make up for the previous difficult times.

The global net position on lemon production is estimated to be 3% down on last year.

By now we all realising just how significant Argentina's contributions are to global

"The processing this year will finish at 1.150.000 tons, 100.000 ton lower than last season. Also

we have at least 10% lower content of oil, which means less production of oil. May was an

unworkable month due to the rains and the season is finishing earlier than we expected - we

disease, also known as Huanglongbing (HLB), has been found in the northeastern Argentine province of Misiones.
In a release, the country's National Food Health and Quality Service (Senasa) reported the Asian Citrus Psyllid (ACP), known scientifically as diaphorina citri, had been found in the departments of Iguazú and Eldorado with three cases in commercial farms and four in urban backyards.

In response, Senasa undertook a process to eradicate HLB-positive plants as part of its contingency plan, highlighting it would continue its intensive surveillance program.

In an interview with FreshFruitPortal, Federcitrus president José Carbonell clarified that there was only one positive HLB case in the latest announcement, pertaining to a backyard plant. He said that while HLB was the citrus industry's biggest threat, Argentina still had the good fortune of being HLB-free on its commercial farms thanks to the strict approach from government and industry to prevent incursions of the ACP. He added that traps were very important in mitigating citrus greening risk. "We have all our citrus industry with traps, which serve to detect the diaphorina. Luckily since 2013 (when the first case was detected) we've had a clear reduction in the vector," Carbonell said.

L USD 32.00+ /kilo

1.45 MMT (Million Metric Tonnes) of fresh lemons will be produced in the 2015/16 season. However, other reports

think at the beginning of September." Argentinian Lemon producer

suggest that the figure will be closer to the 1,300,000 MT we saw last year, especially after these recent harvest delays.

With Argentina producing more oil than all other origins combined it does have the greatest impact with regard to global supply and demand. Just as we saw in

fresh lemon and lemon oil supplies. Imagine what would happen if the HLB disease, which has had such an impact on grapefruit and orange markets, was to strike Argentina's lemon? Well it hasn't happened yet but in August there was a small scare and a reminder that authorities there must remain vigilant to the threat. This is what we heard:

The insect known to carry citrus greening

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BUDDAWOOD OIL *• Australia*

Eremophila mitchellii

Regular production is generally meeting the needs of the market with only some short delays occurring should demand patterns change without warning. Production is steadily growing as the product finds its way into new applications, in particular masculine fine fragrances. There are plans afoot to continue to increase capacities and should the market require, further investment is on hand to cater for any sudden extra demand

▲ AUD 550.00 /kilo

CYPRESS OIL BLUE *Australia*

Callitris intratropica

Supplies remain difficult as production fails to keep up with global demand, which has seen good growth over the past year. There are plans for a plant upgrade, which will increase capacity, but this isn't expected to come online until the third quarter, leaving supplies tight until then.

▲ AUD 550.00 /kilo

ROSALINA OIL *• Australia*

Melaleuca ericifolia

New production started in early 2016 and with it a renewed sense of sustainability. Over recent months many aromatherapy companies have been discouraged from using this wonderful oil due to inconsistencies in quality from mainland Australian suppliers, but this new production based on Flinders Island could ensure the product has a much brighter future. Although it is slightly different from previous examples, the prospect of pure oils and a consistent quality over a long-term period is already starting to encourage the market to adopt this newer quality.

△ AUD 250.00 /kilo

KUNZEA OIL *• Australia*

Kunzea ambigua

New production of a higher viridiflorol type of oil started in late 2015 and has already found its way into new markets. With capacities much larger than the previous sources in Tasmania, end-users can add this product to their portfolio with much more confidence of a sustainable future. Furthermore, the improved economies through distillation of larger volumes and modern harvesting equipment mean more attractive pricing is becoming available encouraging interest from other areas in particular the fragrance markets. Gone are the days of an annual market of a few hundred kilos; capacities today can be measured in tonnes should they be required.

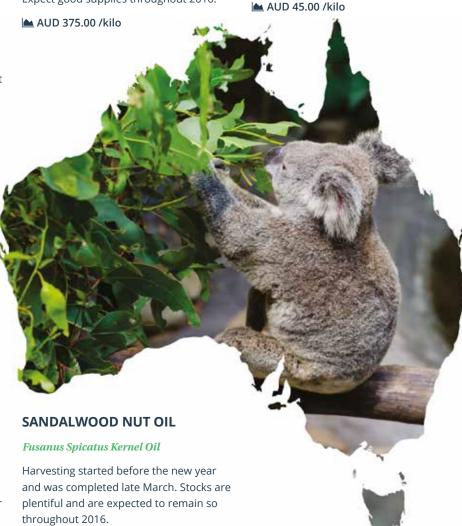
Expect good supplies throughout 2016.

EUCALYPTUS OIL Australia

Eucalyptus Radiata

This oil continues to be in high demand from the aromatherapy markets as it's low cineol levels are seen as a 'safe' eucalyptus, which is good for topical applications. Harvesting within Australia is limited to a few remote wild harvested areas or salvaged older plantations, both of which create challenges when harvesting. Some plans are in place to change this longer term but it's unlikely to yield any positive results in the short term.

It's also understood that Australia is the main importer of Radiata from South Africa leaving us with the question – how much of what we buy from Australia is actually Australian?



L USD 150.00 /kilo

Melaleuca alternifolia

After a record 2015 harvest, 2016 has got off to a stuttering start. Following continuous inclement weather conditions many farms have delayed their harvests until conditions are suitable to get the heavy equipment needed to harvest onto the plantations. One key region, Casino has experienced over 400mm rain in recent weeks.

Whilst tea tree is happy for short spells under water earlier heavy rains wiped out sections of some plantations in the Northern NSW regions, which has many estimating the total crop biomass will be down around 30%. This will have an impact on a growing market, which managed to consume last year's additional volumes.

These delays are starting to put some pressure on the market, which is now consuming any residual stocks from last year that remain in the pipeline. Today we estimate there is still 50% of the NSW crop to be harvested. There are also some concerns over the qualities from some of the hard rain hit areas as during key growing periods they where unable to spray with insecticides due to sitting water on their plantations.

Overall it looks like this year we won't have last year's extra 150 MT which, depending on market demand, could put some pressure on supply and therefore prices later this year.

Today the local currency has also appreciated around 7% on the same time last year so those comparing like for like prices in US Dollars need to also consider this. On the ground locally prices vary, but on average are around AUD 43 /kilo Farm Gate (Farm Gate meaning before drums and local delivery).

▲ AUD 50.00 - 52.00 /kilo

MY FAVOURITE **TEA TREE OIL**

by Jonpaul Howarth

Growing up in the United Kingdom in the 1980s there wasn't the tradition or awareness as there is today, for the uses of essential oils around the home or in daily life. Aromatherapy was neither fashionable nor accepted as in other cultures and countries. So it was not until my late teens that I was first introduced to an essential oil, the first of which was Australian tea tree. It was recommended to me as a cure for a spate of cold sores that I'd been suffering with and to my surprise it actually worked! What I didn't know at the time was that this was to be the beginning of a long and interesting journey for me and tea tree.

Photo below Harvesting fully grown tea tree in North Queensland, Australia.



Photo top to bottom right
Mid-seaason tea tree at around 1m tall

Ultra team visits crop prior to harvesting with the tea tree above 2 m tall



Like many I assume, I stumbled across the F&F industry with my first real job as an ingredients buyer for a local fragrance & flavour company, which was followed by a job trading and distributing natural and synthetic ingredients – all the while tea tree was in the portfolio. I was privy to many new and interesting end-user development projects using tea tree for the personal care sector which continued to stir my interest. Today your local pharmacy, health shop and supermarkets will be full of personal care products citing 'tea tree' as the product's main active ingredient – and with good reason!

Its therapeutic benefits include being anti-fungal, anti-microbial and even antiseptic. It's so good that during World War II every Australian soldier's kit included tea tree oil, which could be one of the reasons why others around the world first started to learn of its medicinal benefits. Many locals call it 'First Aid' in a bottle – very appropriate! It's not just the main active of terpineol-4-ol in isolation which gives tea tree these medicinal benefits but some of the smaller 100 components in combination with each other that are the real performers!

In 2009 I emigrated to Australia and immersed myself in the local market for 5 years, which focused on the production of tea tree oil. The connection with the local producers, their families and the stories they shared on tea tree just emphasised what a special oil this really is and the history is nothing short of fascinating.

There are legendary stories available that would suggest the tea tree plant (Melaleuca alternifolia) was somehow born from the Gods to reward a young princess for her bravery but more truthfully the aboriginals in Australia discovered the product. Indigenous aboriginals used the tea tree plant as a traditional medicine in a number of ways for treating many skin irritations and cold and flu symptoms.

One of the traditional growing areas in Eastern Australia is called Bundjalung, which translates to 'healing ground'. It is thought that Captain James Cook himself named the product 'tea tree' after observing the people of Bundjalung using the leaves to prepare



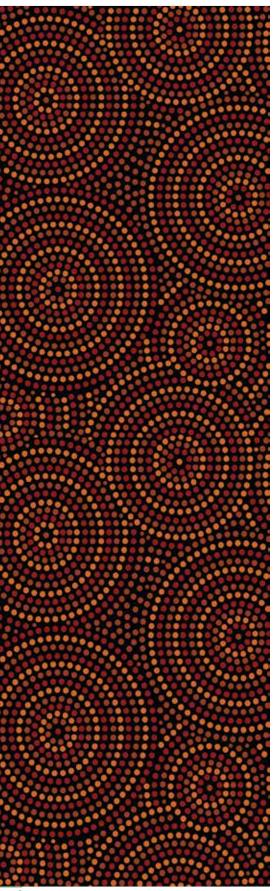
a healing tea! Whatever the truth, tea tree already has around 70 years of modern day history.

The tree itself isn't anything fancy to look at. It could be described as a mis-shaped Christmas Tree, growing up to 2 metres in height before harvesting. The odour also isn't for everyone – you either love it or hate it, but I for one like the smell and that tingly sensation of the oil on the skin. It makes you feel like it's actually working!

If you want to see tea tree in its natural habitat then there's nothing like a trip to the remote areas of North Queensland or the intriguing Northern New South Wales and Gold Coast areas in Australia, where the heart of tea tree production lies. Harvesting can now last throughout the year with most farms or small cooperatives self contained with their own harvesting and steam distillation facilities. It's worth a trip, believe me!

20 years on in the industry and tea tree is now at the forefront of my business activities and there's nothing better than believing in what you sell. I'm an advocate of this oil and if you haven't already tried it then it comes personally recommended. So when you see something that 'contains tea tree', you can be confident the product actually does what it is you're buying it for!

Written for IFEAT World April 2016



AUSTRALIA BUDDAWOOD OIL

Mysterious & Curious

If the name doesn't capture your attention, then the product itself should as its unique woody note has got many in the fragrance world excited!

Buddawood is also known as 'False Sandalwood', 'Desert Rosewood' or by its botanical name Eremophila mitchellii and there's more to the name than first meets the eye. Eremophila can be broken down into its true meaning. 'Eremo' refers to a lonely place or desert, while 'phila' means to love. Put together and you have something like 'to love a lonely place', or 'to love the desert', and it's from the desert, or drier parts of Queensland where the tree finds its native place.

Its meaning doesn't stop there. In the perfumery world, buddawood is also part of the woody family also known as the Chypre family. The name 'Chypre' is French for Cyprus - birthplace of Aphrodite, the goddess of love.

So when all this is put together what's not to love about the name and the product itself certainly won't let you down.

DESCRIPTION

Buddawood is steam distilled from the bark of Eremophila mitchellii and is found in drier parts of eastern Queensland, South Australia and northern-central New South Wales. The tree itself can grow up to 10 metres tall and when flowering produces a delicate white/cream petal as pictured.

The main constituents of the essential oil are eremophilone, 2-hydroxy-eremophilone, and 2-hydroxy-2-dihydro eremophilone, and is said to be somewhat similar to components of vetiver and agarwood.

HISTORY

The species was first formally described in 1848 by the botanist George Bentham and the description was published in Journal of an Expedition into the Interior of Tropical Australia. The specific epithet (mitchellii) honours the explorer and surveyor, Thomas Mitchell.

Photo right
Buddawood tree flowering



As with many Australian essential oils buddawood has many stories connecting its medicinal and therapeutic benefits with Aboriginal communities. Steeped in history for its positive effects it was even recognised as a potential fragrance fixative back in the 1920s. For many years it remained a boutique essential oil while other local oils, particularly sandalwood and tea tree, took all the headlines and grew on a global stage.

Despite its seemingly multi-purpose properties the product hadn't been given the opportunity to prosper until recently. In the 1990s there was a small amount of production, which was extracted by hexane, but raw material supply and producers interest was not in place, so for anyone who did show a genuine interest, projects became a non-starter. Thankfully, with the help of a few supporters, a new steam distillation facility was set up in South Australia and with it the guarantee of the respective state governments to harvest almost unlimited supplies of the tree, which in turn helped combat what was seen as fire hazards by the

local authorities. So only in the past few years has buddawood had the platform on which to shine and with confidence amongst potential end-users growing, so to is the demand.

PERFUMERY

There are not many examples of this oil being used in fine fragrance but having canvased a number of perfumers from around the globe there has been a genuine interest in the product.

Many describe the odour as having a sweet

The product performs, has genuine benefits, it's a little unique, has a great story, its sustainable and competitively priced.

So isn't it time for a new sustainable woody note that ticks all the boxes?

AROMATHERAPY & MEDICINAL

It was the Aboriginals who first started to use buddawood to sooth cuts and grazes but the oil was also used in religious ceremonies to inspire peace and mindfulness. It is believed it also helps centre our emotions and encourage calm and relaxation, making it a fantastic aromatherapy oil. It can also be used to help relieve muscular pains thanks to its anti-inflammatory properties.

and fresh top, a musky heart, a warm and mossy depth and a peppery spice note.

However, in today's market it does present some interesting commercial value as other essential oils in the woody family are either more expensive (like sandalwood), IFRA restricted (like oakmoss) or simply unavailable (like vetiver). Not only does this have a unique odour profile, but also it performs well as a fixative as well as blending nicely with cedar and patchouli. So isn't it time for a new sustainable woody note that ticks all the boxes?

AUSTRALIA EUCALYPTUS HORTISES OIL

A New Native Eucalyptus

Eucalyptus horistes is a mallee type
Eucalyptus that is native to Western
Australia. Commonly known as Eucalyptus
borealis, it is a sub species of Eucalyptus
kochii and mainly found in the northern
areas of Western Australia.

This particular eucalypt is very high is cineol and average levels are consistently near 90%, sometimes as high as 95%. This is almost pure eucalyptol, giving it a very fresh, camphor odour.

Due to its high cineol levels, Eucalyptus horistes has great medicinal properties and would represent a good choice in products such as mouthwash and cough suppressant medicines. It would also be a good choice for use in insecticides and insect repellents.

In recent years Australia has lacked the ability to offer sustainable eucalyptus essential oils despite its strong history in the area. This is due to a lack of investment, poorly managed investment schemes and high labour costs meaning that any production would result in the oil being uncompetitive. That said this particular oil has good options regarding sustainability with as much as 20MT available in the early days of processing. This will give this oil a good platform on which to establish itself in the market place and with local communities involved in the harvesting and distillation there is a good story to go with it.



SANDALWOOD OIL INDIAN Australia

Santalum album

The plantation resource in Western Australia is starting to produce good quantities of oil. Press releases by one of the producers indicate that it will increase production by more than 10 fold in 2016 suggesting an additional 10 MT more of Indian sandalwood oil!

With the added introduction of a second supplier during the year there will be a little competitive tension in the market and whilst the quality of the plantation oil is not quite up to the traditional Indian standard, it does appear to be of reasonably good quality.

This will give perfumers a real chance to start using the oil again after a period in the 'cold' due to the wild harvest Indian sandalwood not being accepted as it had a high percentage of untraceable wood. However, prices do remain high with one producer currently asking US\$4,500 per kg.

That said there are unconfirmed reports that long-term deals are being done at significantly lower prices to encourage usage whilst keeping the appearance of the market price higher to satisfy investors.

Another supplier is now offering oil around US\$ 2,500 /kilo which is more realistic in today's market so we expect to see prices of plantation oil stabilise closer to these levels in the near future.

■ USD 2,500 /kilo +/-

SANDALWOOD OIL QUEENSLAND

Australia

Santalum lanceolatum

A new oil to market from the Queensland sandalwood species that has traditionally been used for incense and carving. It has a light woody odour with a slight citrus undertone and has a lovely golden colour. It can be produced in reasonable volumes

on a sustainable basis and you really do need to sample this oil to appreciate how good it is - production is up to 5,000 kg per annum.

▲ AUD 1,700.00 /kilo

SANDALWOOD OIL WEST AUSTRALIAN

Santalum spicatum

New production of oil from plantation wood has started to come online bringing with it a sense of relief from those desperate to find alternative sources. This has been a long-term event and the benefits should be seen long into the future.

The extra volumes are modest for the moment so the impact on price isn't being felt as yet but this will come, as will the additional security of supply many have been waiting for.

The changes planned for the local wood distribution supply will not come online in full by October this year as forecast due to a challenge to the sustainability of the wild harvest which is being investigated by the EPA - at this stage there is no clear date for their decision. Oil will still be supplied but at slightly lower volumes from October which could add some pressure to an already strained market.

■ USD 1,700.00 /kilo

LIME OIL CP @ Brazil

Citrus latifolia

Domestic demand for fresh fruits has meant a reduction in this season's first bloom limes being sent for processing. It is anticipated that the net effect is around a 15% reduction in oil processing, a trend that we may see continue throughout the year.

Fresh exports have been significantly lower with prices rising around 20% in recent weeks, which gives us an insight into the local market conditions. A recent lack of rainfall between June and August has lowered the production period placing some additional pressures on the processing markets. It's not the first setback this year with heavy rains in January and February hitting the production hard. It's anticipated that the situation will improve during Q4 but is unlikely to have any immediate impact on the oil markets.

■ USD 34.00 /kilo





Fortunella japonica

Interest continues to grow with tangible results now being seen in markets across Europe and Asia. Capacities remain at around 5 MT per annum but thoughts are in place to expand this capacity given current interest and ongoing development work at the end-user level.

L USD 180.00 /kilo



LEMON OIL

Brazil

Citrus limon (L.) Burm. F

The season has been quiet good for this up and coming lemon producing nation with many now happy to consider Brazilian quality as a straight alternative to Argentinian. Production is continuing to grow along with general demand.

L USD 29.00 /kilo



Citrus aurantium ssp amara

Production of both green and mature fruits have been quite good and with an earlier than usual season, new oil is already available.

Demand is expanding substantially for this material for both flavour and fragrance applications and with reduced availability from Italy and Ivory Coast demand remains firm.

▲ USD 56.00 /kilo

SPECIAL REPORT ORANGE OIL BRAZIL

A market in crisis

Officially CitrusBR closed the 2015/16 season with figures of 261 million orange boxes processed (40.8kg per box). The total of processed and non-processed fruits was calculated to be 302.2 million boxes, which it summarised as follows: The juice yield on fruit of 302.2 boxes per metric ton of FCOJ was the worst average ever recorded by the industry. It was 25.7% LOWER than the 240.5 boxes experienced in the 2014/2015 season. The lower juice yield was the result of the above average rainfall caused by the El Niño during peak harvesting season. As a result, not only juice content in the fruits has dropped significantly, but also average brix of fruits processed has fallen from 12°Brix in 2014/2015 to 10.2°Brix in the 2015/16 season.

We have to remember that the orange oil market is a by-product of the juice market so when the juice market sneezes, the oil market catches a cold!

You have to understand the juice market's impact on the derivatives market to appreciate how it influences the overall picture and ultimately our oil markets. With the outlook for orange juice market even worse than we expected when we assessed the situation earlier this year it seems the world market is shrinking, Brazil is exporting less and prices are rising.

Fruit World summarised the fresh fruit and juice situation as follows:

"Lower industrial output orange in Brazil, the world's largest producer, and the decrease in the harvest of Florida due to disease in the orange groves, led the USDA (United States Department of Agriculture) to reduce the estimate of orange juice production to 1. 6 million tons in the period 2015/16.

The new estimate indicates a volume 11% lower than forecast last January, when the US agency estimated world production of 1.8 million tons. The drop in consumption of the drink is leading to the orchards in Brazil and the United States being switched to other cultures or construction projects. Thus, the global product supply drops quickly. In 2011/12, the industries produced 2.2 million tons for the juice market, according to the USDA. The biggest falls in drink production occurred in the leading producer countries: Brazil and the United States.

Brazilian production of juice was 1.3 million tons in 2011/12; falling to 1 million in 2014/15 and will be just 885,000 in 2015/16. In the United States, the drop has been even higher. After having put 629,000 tons of juice on the market in 2011/12, US industries have cut production to 438,000 last season and to 383,000 in this. Global consumption also dropped, but is higher than production for the second consecutive year. 1.8 million tons will be consumed in this harvest, down from 2 million tons in 2014/15. The European Union and United States will be the main drivers of this reduction.

With the new deficit between production and consumption, world stocks at the end of the harvest were only 485,000 tons, 328,000 of them in the United States. The world leader in exports, Brazil will put 885,000 tons into the foreign market, down from 1.13 million in the previous harvest. Leader in imports, the European



United States, 280,000. Both import 15% less in the year."

It is understandable why processors are worried about future supplies. In a normal year around 20% of oranges go into the fresh fruit domestic market. Due to the late blossoming flowers from last year (which produce low yielding fruits unsuitable for processing), it is estimated that this year another 20% will also reach the local market for fresh consumption. Generally the local markets for fresh fruits peak from February to April so many of

2016/17 Season Forecast -18% **FRESH ORANGE**

these off fruits have been recently picked and sold leaving the available fruits for processing from May onwards very low. This at a time when fruit picking is at its lowest.

Looking ahead to the 2016/17 season the story doesn't get any better and with it neither do the prospects of more oil availability and price reductions. A Brazilian crop estimate project (PES) looks at the total number of orange bearing trees, average productivity forecasted per bearing tree and estimated total orange

production in the state of São Paulo and Minas Gerais Triangle Citrus Belt for the 2016/17 Season.

Currently it is forecasting a sharp reduction of 18.3% in the total 2016/17 crop compared to the one that just closed which will take another 60 million boxes out of the market!

The USDA says "Brazil's production is forecast to drop 2.4 million tons to 14.4 million as higher-than-normal temperatures during September and October significantly damaged fruit settings. Oranges for processing are down sharply and consumption is down slightly on reduced supplies."

So what does this mean for our oil markets? Is there enough oil to supply the growing demand given the reduction in juice production? The answer somewhat contradicts the global juice scenario and the ongoing supply concerns in that so far this year (January to July inclusive) supply of oil exported from Brazil has increased by around 15% on the same period in 2015. Although output was lower in 2015 this year's YTD exports still mirror those of 2014 when average prices (based on FOB Brazil terms) were 45% lower than they are today!! Average prices today are 25%

higher than the same period last year. So are we as oil market consumers paying the price for the major producers decrease in juice sales? That would certainly stack up when we see some of the smaller producers, less dependent on the juice

ORANGE OIL CP

+25% Today's Price v's 2015

markets still able to provide much better prices, but maybe we are being too cynical. At the end of the day, 3 major Brazilian producers control the market and today, like yesterday and tomorrow, prices will remain firm even if supply doesn't seem to be causing any issues for now. Whichever way we look at this there is a real problem ahead. Whether it is global juice consumption or the shorter-term fresh fruit supplies we are sure to be paying these high prices for the foreseeable future.

Mathematical Mathematical Mathematical Label USD 10.20+ /kilo

SPECIAL REPORT ORANGE OIL BRAZIL

Clitrus Greening (HLB)

The global orange market is in crisis, with the average annual growth rates over the last 2 years at -7.0%. As a result, market volume decreased to 61.1 million tons in 2015. One of the main reasons is the "citrus greening" disease, widespread in the key centres of orange cultivation.

To help agronomists, genetic scientists announced their readiness to provide modified forms of crop, but it will take a lot of time and resources to overcome this disease. Therefore, a reduction of the global orange market volume is expected once again in 2016, with continuous adjustments corresponding to the nature of product consumption.

Brazil (16,540 thousand tons in 2014), China (7,003 thousand tons), and the U.S. (6,680 thousand tons) account for a significant amount of orange production, together supplying 45% of total global volume. In turn, the largest plantations of orange trees are located in Florida (the U.S.) and Sao Paulo (Brazil). Unfortunately, citrus greening has already stricken these territories, which has affected production volume. From 2010 to 2014, average annual rates of orange production growth amounted to -2.8% both in Brazil and the U.S. China, in contrast, showed positive dynamics, with positive + 4.8% growth over the same period.

Orange yield reduction affects consumption worldwide. In this case, a distinction should be made between fresh orange consumption and the processing of fruits into juice. Brazil is known to be the largest global supplier of concentrated

orange juice, and the U.S. products are demanded mainly domestically. The industry impact of a decrease in orange harvest in these countries is analysed below.

While approximately 75% of all oranges produced in Brazil and the U.S. were processed in 2010, this value decreased by 2014, to 72% in Brazil and to 67% in the U.S. Yield reduction largely affected the volume of processing and volume of concentrated juice supply to the foreign markets.

Indeed, global exports of concentrated orange juice have slowed their pace. In 2014, the volume of concentrated juice exports amounted to approximately 2,100 thousand tons, which was 17% less y/y. At the same time, Brazil remained the largest supplier of products, with a 53% share (volume decline by 13% y/y). The U.S. took a 7% share (a 60% decline in volume y/y). The fall in exports was caused by a combination of the reduction of orange yield in key concentrated juice producing countries with a weakening demand from importers. It should be noted that the decline in concentrated orange juice supply does not necessarily imply a reduction in the consumption volume of

packaged juice containing oranges. Juice manufacturers can combine mixtures of other, more affordable fruits and berries, or manufacture products with a lower content of orange concentrate.

China is still an imperceptible supplier of concentrated juice (with a 0.2% share of global exports). The bulk of Chinese oranges is supplied to the domestic market in fresh form. However, the share of processing grew from 3% in 2010 to

Photo right
Infected orange tree
Photo below

Healthy orange tree





9% in 2014. If this trend continues, China has a chance to increase its presence on the global and the domestic market of concentrated juices. At the same time, this country has the resources necessary to increase production volumes. Yields of oranges in China, standing at 12.1 MT/Ha, are significantly inferior to the yields of the leading countries, with Brazil, the U.S., and the Mediterranean exceeding 20 MT/Ha. Yield capacity will depend primarily on the weather conditions and the support of the industry at state level.

While global consumption of concentrated orange juice experienced a significant decline, the demand for fresh oranges decreased slightly. From 2010 to 2014, almost all countries observed negative average annual growth rates of per capita consumption value (around 2%), except China. In 2014, the average per capita consumption rate of fresh oranges in China amounted to 4.5 kg/person per year, which was considerably less than in the leading countries. This means that there is an opportunity for growth of fresh produce consumption in China. Demand is increasing, fueled by the growth of urban population and the standard of living.

The top 10 countries in terms of

consumption of fresh oranges include the countries which grow oranges themselves. The first place is taken by Brazil, with 26.4 kg of fresh oranges consumed per person per year. This is the lowest value recorded over the analyzed period; however, it still far exceeds the global average value, which is no greater than 5 kg/person.

Large countries without their own extensive plantations of orange trees, that have to import the product, are not on this list. Spain (24.7% in 2014), South Africa (17.3%), and Egypt (17.0%) are the suppliers of fresh oranges in this case. Netherlands (8.7%), Russia (8.0%), France (7.7%), Germany (7.2%), and other countries comprise the countries of destination. In 2014, 6,624 thousand tonnes of fresh oranges were exported overall, 5% less y/y. However, a drop in the volume of supplies did not begin until 2014, before that, it was preceded by growth. Reduction of fresh orange trade volume in 2014 can be attributed to weaker demand caused by the crisis in the economies of countries of destination. In addition, Russia introduced a ban on imports of fruits from the EU countries in 2014, and a ban on supply of oranges from Turkey at the end of 2015, which also affected trade volumes. However, this decline in fresh orange trade in 2014 was caused by political and economic reasons, not the weather or tree diseases.

The orange industry in the U.S. and Brazil is in crisis, as yields decrease because of spreading "citrus greening" disease, which affects the volume of processing, and has a direct impact on the global concentrated juice market. The share of products supplied for processing decreases as a result, similarly the consumption of fresh products, both in Brazil and in the U.S. The reduction in consumption of fresh oranges also occurs among countries importing products from the Mediterranean region and South Africa. However, in this case, this is caused primarily by political and economic factors.

While the orange market around the world is experiencing difficulties, China displays positive dynamics. The country is increasing production of oranges and concentrate, and per capita consumption of fresh produce is growing. For now, China's orange industry supplies its products mainly to the domestic market, but it is possible that China may increase its presence in the global market, replacing American products.

Source: http://fruitworldmedia.com/

SPECIAL REPORT ORANGE OIL BRAZIL

Citrus -Good For Obesity?

There hasn't been much in the way of good news for orange recently with global demand declining amidst health warnings that too much natural sugar (fructose) is bad for us. Well thanks to another medical report those warnings may be heeded with the news that now oranges and other citrus fruits can help with the fight against obesity and indirectly diabetes.

A report released late August 2016 by a team of researchers at the Universidade Estadual Paulista (UNESP) in Brazil conducted an experiment with 50 mice, treating them with flavanones found in oranges, limes and lemons.

The flavanones they focused on were hesperidin, eriocitrin and eriodictyol. For one month, researchers gave groups a standard diet, a high-fat diet, a high-fat diet plus hesperidin, a high-fat diet plus eriodictyol.

The high-fat diet without the flavanones increased the levels of cell-damage markers called thiobarbituric acid reactive substances (TBARS) by 80% in the blood and 57% in the liver compared to mice on a standard diet.

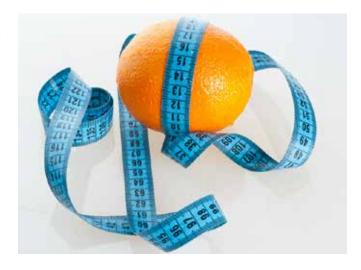
However, hesperidin, eriocitrin and eriodictyol decreased the TBARS levels in the liver by 50%, 57% and 64% respectively, compared with mice fed a high-fat diet but not given flavanones. Eriocitrin and eriodictyol also reduced TBARS levels in the blood by 48% and 47%, respectively, in these mice.

"Our studies did not show any weight loss due to the citrus flavanones," team leader Thais B. Cesar said. "However, even without helping the mice lose weight, they made them healthier with lower oxidative stress, less liver damage, lower blood lipids and lower blood glucose."

Ferreira said the study also suggested consuming citrus fruits 'probably could have beneficial effects' for people who are not obese, but have diets rich in fats.

The team's next goal is to explore how best to administer these flavanones, whether in citrus juice, by consuming the fruit or developing a pill with these antioxidants. There are also plans to conduct studies involving humans.

This may be the good break the orange industry needs in fighting the bad publicity recently received but there is probably a long way to go before we see any net effects in the market. It should also be said that these studies were funded by one of the three major Brazilian orange producers who no doubt have a vested interest in promoting the health benefits of their product.



D'LIMONENE \ ORANGE TERPENES

Brazil

After a quiet 3 months (May – July), shipments from origin have fallen to new lows with year on year figures (January to July) indicating a 35% drop in exports from last year. Whilst a comparable figure compared with 2014 when you look further back in time it represents a 50% reduction from 2013. You need to go back to 2011 for a similar set of export figures at which time prices where peaking at the same level as they are today (FOB Brazil official export numbers).

So unlike with orange oil, orange terpenes and d'limonene supplies maybe feeling a little tight at the moment, which is fuelling price speculation at the end-user level as they continue to follow the trends set by orange oil prices.

Expect some further tightening in the coming months as endusers / manufacturers look to cover 2017 contracts at a time when supply prospects seem very limited.

L USD 8.50 - 9.00 /kilo



LAVENDER OIL *Bulgaria*

Lavandula angustifolia

It's safe to say that although total figures aren't yet collected (there are no official figures published) it has been a good season for the Bulgarian lavender producers. Weather conditions have been kind and those newer plantations blossomed well, producing what will no doubt be a record year.

It was much anticipated with many producers keen to tease the market in recent months with such promises, for which they have not disappointed, but with it may have damaged their own price expectations with supply looking to exceed demand in the immediate term. With varying qualities still posing a challenge it becomes harder to calculate the average prices but realistically we can say that prices for the 2016 season will be around 30% lower than the previous year.

As mentioned, quality is becoming a defining factor with different markets requiring different oil qualities. Somewhat ironically to what we usually see for the aromatherapy clients, they are more inclined to accept the lower quality material than the perfumery markets who prefer the more traditional and established qualities coming from the older plantations. With more 'new oil' in the market and a growing demand from the aromatherapy sector we are seeing

a shift in focus from the producers and the emergence of two different qualities. One quality is the 'premium' grade for the perfumery industry and the other a 'standard' quality for the aromatherapy market. The price difference between the two can be as much as 20%.

We estimate in 2014 the crop was around 140 MT, in 2015 200 MT and in 2016 approximately 280 MT and it's possible these numbers can keep growing!

L Euro 45.00 - 55.00 /kilo

ROSE OIL @ Bulgaria

Rosa damascena

This year's season started a little late and was generally slow due to continuous rains affecting the area. Despite the rain there was not so much yield losses and the season finished with average results (based on recent years) and better than last year's disappointing crop.

As we entered this season the market was starved of supply and as such most of this year's crop has already been sold. Prices remained firm, a trend carried over from last year. Perhaps we will need to see a couple of better seasons to have any real

L Euro 9,500.00 /kilo

impact on pricing.





Helichrysum angustifolium

There are a number of examples in the market of oil derived from new plantations some of which are of Croatian origin, others are not. It is quite a turnaround after over a year with little supply to see more offers in the market today but our advice is to be careful on both quality and origin. With the extra material available we have seen prices soften a little but at the very least we have seen the market stable after a difficult period.

LAVENDER DALMATIAN OIL

Supplies are healthy after almost perfect harvest conditions delivered a better than expected crop. This will be good news for the topical health markets who prefer this oil to other more traditional qualities of France and Bulgaria due to its natural composition, Croatian lavender acts as a more powerful antiseptic to other lavenders making this ideal for household first aid kits and other medicinal antiseptic creams.

L USD 58.00 /kilo

CASSIA Q Cinnamomum cassia Blume

This year's crop period was very short. A delayed start was concluded with a early finish with around 30% less oil produced than from the same period last year. This continues a downward trend in recent years for cassia as last year's production was 50 MT less than 2014 at levels of 400 MT.

Producers have cited increased costs of around 20%, which they are trying to compensate at the other end with the buyers but in a weak market proving difficult to achieve. As such there will come a time in the not too distant future when stocks are depleted and their higher target prices will become more obtainable. Our advice would be to cover now at reasonable prices rather than risk the markets firming at a later date.

■ USD 41.00 /kilo

CLARY SAGE OIL

China

Salvia sclarea L.

It is still a challenge to understand the full context of the situation in China. Despite noises being made to suggest there will be an increased 2016 production; we are seeing China in the global market as net buyers. We certainly know that their internal demand for sclareol is high as demand for Ambroxan grows year on year and they've been trying to address this with new plantations.

Suggestions of an additional 15 MT are still being discussed, which will help the overall supply imbalance in the market but one report recently suggested that the oil quality won't be very good on colour and odour.

The new season will begin later than usual around October but it isn't thought that any outcome of this crop will make much impact on the global scene. Essential oil buyers will need to turn to France and Russia for their supplies.

■ USD 220.00 /kilo

CITRONELLA OIL

O China

Cymbopogon winterlanus

The Chinese will say the market prefers their quality over their Indonesian counterparts but the price differential in recent months has led customers away and as such production has slowed. The fact there isn't an over supply is keeping the markets balanced and prices stable.

As August/September is the main production time we may see a lack of oil produced to cover the closed season period until February so prices may firm in Q4 on the back of low supplies. A lot will depend on client's choices between Indonesia and China.

▲ USD 18.00 /kilo

Photo top left

Photo top and bottom right

Lavender flower in Croatia

Eucalyptus leaves

Eucalyptus globulus

Crude oil prices have been stable of late, which has encouraged some processors to produce more volume. However, prices remain firm as farmers seek the best returns for their raw materials. Demand has been fairly weak in recent months but there is some fear that if demand returns strongly there won't be enough supplies to meet the demand, which may prompt prices to rise again.

Total volumes produced last year were 6% down on 2014 and it's expected that the trend will be similar this year. Today's prices for September are the highest seen in recent history.

■ USD 14.00 /kilo

Allium sativum L.

There has been little change of late as it continues to be bad news. Depending on whom you speak to there has been either zero production or very little production for over 12 months. This has put an immense pressure on supplies and with it market prices. Today prices are higher than they have ever been with no real positive foreseeable changes on the horizon. The season started in May but it seems production will only be made against firm orders, which will no doubt leave us with no carryover after the short season. Analysts say that based on the real price for garlic in the local market the oil price would have to be over USD 400 /kilo to be viable.

M N/A

Zingiber officinale

There have been some improvements in supply since late Spring but stocks at origin are now lower as the market awaits fresh material entering around October/November. Prices today are still reasonable but may rise between now and the new crop as supplies reduce.

■ USD 75.00 /kilo

Lavandula angustifolia

The Chinese season is later than that of the Europeans so the market tends to be satisfied by the time Chinese oil hits the market, especially with increased volumes from the likes of Bulgaria, Croatia and France.

This won't help an already struggling product with some traders still trying to offload 2015 season material at under cost price. How the Chinese market their oil going forward will be interesting but it's likely that most will be consumed internally with few opportunities in the export markets.

SD 85.00 /kilo

NATURAL CITRAL @ China

Ex Litsea

August to October sees the height of the season but it isn't expected to help ease the increasing prices in the market. Heavy rains prior to the start of the season damaged parts of the crop areas, which is likely to badly effect the output for the season. It may be advisable for buyers to step in with any early offers rather that wait for the market to realise the full impact of the poor crop. Further analysis will take place in October once the harvesting is complete.

■ USD 20.00 /kilo

Pelargonium graveolens

The smaller production in 2015 managed to keep prices firm, which is a trend many expect to see continue this coming season, if it ever starts. Competition amongst collectors, coupled with higher labour and production costs, has meant that early calculations of new season oil actually see prices increase!

The season will continue over the next couple of months so maybe there is room for things to improve; however, at this stage this scenario seems unlikely.

■ USD 175.00 /kilo

TEA TREE OIL

© China

Melaleuca alternifolia

Markets remain stable with demand constant in recent years. Demand tends to increase when Australian prices rise but the weak Australian Dollar has created cheaper export prices in recent times despite local prices increasing.

As always, China exports vastly different qualities of Tea Tree Oil and so called 'Tea Tree Oil' so buyers should take care when comparing with the industry standards from Australia.

■ USD 25.00 /kilo

BASIL OIL LINALOOL & Egypt

Ocimum basilicum L

New crop started a little late in August and although early days all production is being purchased by local traders looking to keep supply tight and markets firm. There is some evidence of better quality material coming through but again this will come at a premium. Expect a reasonable season but strong demand will keep prices rising.

△ USD 115.00 /kilo

Chamomilla recutita

Production ended early May after an early start, which was due to high demand at that time. Since then markets have weakened and some stocks still remain. As a result, prices are today a little lower that earlier in the year. However any increase in market demand will quickly see stocks depleted and with it prices starting to rise.

■ USD 950.00 /kilo

CORIANDER HERB OIL *Egypt*

Coriandrum sativum I

Production started mid-April and finished late May but as usual most production is made to order. Prices have softened but remain higher than prices from other origins, where we are still finding some carry over stocks from last year, which may affect demand this season for the Egyptian oil.

■ USD 135.00 /kilo

Cuminum cyminum

The crop started in May and closed early falling well short of usual expectations. Also demand for seed stocks has been unusually high and with it prices have started to increase quiet sharply. It is almost certain that there will not be enough seeds to keep all markets satisfied until the next crop in April 2017 so expect supply and price pressures to remain in place for some time.

■ USD 110.00 /kilo





9TH ANNUAL IFEAT STUDY TOUR AMERICA

Is this the best so far?

The 9th Annual IFEAT Study Tour took place in the USA from August 13th to 21st 2016, visiting Texas, the Pacific Northwest and the Midwest. (Photo 3) It was a hectic schedule, involving some 47 IFEAT members from 20 countries including two from the Ultra Team.



Photo left:

Group photo - 47 IFEAT Members from 20 countries attended this year's Study Tour Below are some of our reflections on the StuWdy Tour, which we considered the best so far - but every Study Tour seems to be better than the previous one! All the companies that we visited were well prepared and shared a wealth of information. The presentations made by each company were professional and to the point and delegates were impressed not only by the detailed data provided and the excellent presentation skills but also the willingness to show delegates around their processing operations, laboratories and other facilities. Equally impressive was the warmth of the welcome as well as the hospitality showed by each of the companies visited

Most of the companies visited were involved in the mint industry and IFEAT members and each of them shared with the group their in-depth knowledge of the US mint industry. It soon became apparent to the delegates how very well organised is the American mint industry. The acreage of farms is huge, particularly in contrast to the Indian mint industry, while the farming practices, irrigation and distillation techniques are highly commendable. Throughout the visit delegates often compared US mint operations with those of India and recognised that the Indian mint industry, as well as the essential oil industry in many other countries, could learn much from US practices.

The opening cocktails, sponsored by Eucaforest Pty. Ltd, and dinner in San Antonio on Saturday evening went off well. Some registered delegates were unable to join the Study Tour due to US visa issues, health reasons or pressing engagements, while some arrivals were delayed by adverse weather conditions. During the day some delegates toured the town and were impressed by San Antonio's River Walk and the Alamo.

Sunday saw the first visit of the Tour with a long drive to the cedar wood plantations and distillation facilities of Texarome Inc. The expanse of cedar wood forest and the sustainable practice of cultivation being practiced was amazing with vast stretches of complete mountains covered with the cedar trees. The company owners, Mr. Gueric Bouchard and his son Rick, were very open and showed us the way cedar wood was being collected, the various qualities of wood and possible yields from different qualities. The unique thing to see in their production facilities was the indigenously developed continuous steam distillation facilities, which was unique to most delegates, as one generally does not find this process being followed in any other industry, as batch steam distillation is the norm in most of the natural essential oil industry. The detailed presentation and documents provided, especially on distillation techniques, was very much appreciated by all.

After this visit, the group returned to San Antonio to catch the flight to Seattle, reaching our hotel by about 10 PM. Indeed a feature of the Tour was the hectic schedule, usually involving a new hotel each day and late check-ins and early check-outs. Fortunately we were able to catch up on sleep in the coach!

The second day was another great day with the complete professional way the Cochran family and colleagues from Norwest Ingredients showed their complete facilities for mint oil production, explaining with the help of video presentations their storage and production facilities, fractional distillation



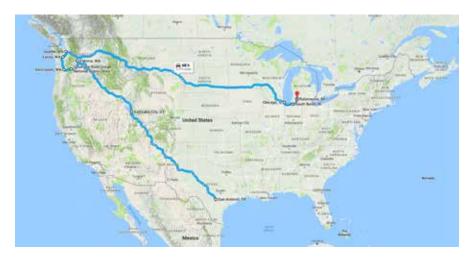


Photos from top to bottom:

Texarome's distillation facilities was visited along with a tour of the plantation areas

Norwest showed their complete facilities with the delegates getting the chance to have a extensive odour evaluation on various mint qualities

The map shows the area travelled during the tour - thankfully it wasn't all by road!



equipment etc. Another feature was the immaculate timing kept when taking a tour of the complete facilities. After the tour, the Cochran family farmhouse, surrounded by mint fields, was opened for an excellent lunch and odour session of the different varieties of mint oils from various regions around the world and the specific characteristics of these individual qualities. Having got to sniff so many different qualities was a real education. In our careers, each spanning over 25 years, we have never had the opportunity to sniff so many qualities. The session was

organised with various members of the management team sitting with each group of delegates explaining and clarifying every question. In addition, the company shared a wealth of information in booklet form. (Photo 6).

Over lunch there was a presentation from Norwest Ingredients as well as an expert from the MIRC (Mint Industry Research Council). The latter explained the MIRC's role in assisting stakeholders - farmers, distillers and traders - to overcome the various challenges being faced by the

66 another great day wealth of information

A REAL EDUCATION guided tour very impressive

very lively and friendly nice souvenir BEST SO FAR

WELL ORGANISED **very professional** 99

industry, including verticilliam wilt. In the evening Norwest entertained us to dinner at the beautiful Apple Tree Golf Course Resort. Prior to dinner, people relaxed on the green lawns, some doing Tai Chi exercises led by Winnie Yeung and others sipping wine and cocktails.

Day Four saw a visit to Labeemint Inc., again a passionate family company with great values. Following an introductory presentation by the new President the delegates were treated to a detailed tour of the company's operations. The highlight was the fractional distillation unit designed by Tyler Labee, who had trained as an aeronautical engineer and had designed and constructed this excellent unit. Fractional distillation gives Labee the ability to process their mint oils with a light top and bottom cut to terpeneless qualities. Other processing equipment includes a short path horizontal distillation unit as well as a state of the art onemetre diameter, continuous wiped film evaporator.

Delegates were also shown the rigorous quality assurance process as well as the field to drum traceability and the odour grading and analytical profiling and grouping that allows for the creation of consistent blends. Delegates were presented with an impressive box of sample of various mint oils from different regions, and did some olfactory testing. This was a nice souvenir to take back home. Another highlight of the Tour was meeting up with various family members







Photo left

Callisons have one of the most modern laboratory facilities in the mint industry

Photo right

Alan Brown lectured us on various aspects of peppermint and spearmint production

Photos left page top to bottom

Dan Labee, President and Managing Director of
Labeemint addresses the tour

Shinn Family Farms Inc. who produce 11 different hop varietals



including Dan Labee, the President and Managing Director of the company, as well as Jack Labee, age 92 the company's founder and spirit of the company. Jack still comes into the office most days and was very enthusiastic in welcoming the group.

Following an excellent lunch in the company grounds we visited Phil Sealock's Farms where mint was being distilled, We were treated to a guided tour of the distillery operations by John Cheatham, Lebermuth's Manager of Field Operation, who had spent many years developing and installing such equipment.

Then followed a visit to Shinn Family Farms Inc. a 2,200-acre farm now being farmed by the fourth generation of the family. A variety of products are produced but hops predominate. Using an open-sided train the delegates toured the farm sampling local beers as we travelled. Ryan, a family member, provided a detailed tour of the very well organised hop operations. This proved of great interest to the delegates, the vast majority of whom were totally

unfamiliar with the growing, drip irrigation and processing of hops. Currently Shinn produce 11 different hop varietals, and we had samples of some of the varietals to smell. Ryan outlined some of the differences between varietals i.e., more bitter, sweet, herbaceous, better for dark beer or light beer etc. Unfortunately picking and processing was not being undertaken at the time of the visit, but we visited the distillery and saw the destemming equipment.

The following day delegates travelled to White Swan, Washington to visit Green Acre Farms, who are operating one of the industry's new stills. Spread over 2,000 acres of Indian lands, the farm grows apples, peaches, pears, hops and mint. Again the visit was very well organised and they were very proud of their food safety programmes and having their farm accredited with various certifications.

Then we continued to the Columbia River Gorge and enjoyed RCB International's sponsored lunch over the Hood River. After lunch, we travelled down the scenic Columbia River, during which we visited the Bonneville Dam, the fish ladders and the fish hatchery, as well as some delegates climbing the magnificent Multnomah Falls, almost 200 metres high.

The following day we drove north to Callisons for a tour of their facilities and exposure to one of the most modern laboratory facilities in the mint industry. Three different aspects of the company's operations were highlighted, quality control and analytical services, the applications laboratory and the marketing aspects. The visit to the facility again was very professional and tightly monitored and scheduled. The odour evaluation facilities, assisted by software and GCMS identification of mint oils on a big charts on the walls was very impressive. (Photo 9)

After lunch on the Callisons campus, we drove to Seattle Airport, for dinner and an evening flight to Chicago. It will be a late arrival at O'Hare Field, followed by a 2-hour coach journey to St. Joseph's Michigan for a 3AM check-in.



After a mid-morning check out we took a short 40-mile drive to Kalamazoo and Kalsec Inc. impressive campus. There followed a tour of their spice and hop extract facilities and very impressive laboratory and flavour creation facilities. Then followed lunch in the woods on the campus where several company members spoke on various aspects of this familyowned operation.

In the afternoon, after a short 90-minute drive to South Bend, Indiana for a tour of The Lebermuth Company and its fragrance production. Rob Brown and his colleagues, several of whom had played an important role in organising the Study Tour, warmly welcomed us. A brief presentation was made on the company, including showing 3 company related facility. Then followed a plant visit of their relatively new facilities, the highlight of which was the new impressive Fricke Concordia, automatic dosing machine. In the evening a special dinner, sponsored by Lebermuth, was arranged in South Bend at the historic Studebaker Museum, which included tours of the magnificent Oliver

The last visit of the Tour was to Shady Lane Farms, where we experienced Midwest mint production, seeing spearmint and peppermint growing side-by-side. Alan Brown lectured us on various aspects of peppermint and spearmint production and this was followed by a tour of the modern distillation plant.

The group continued into Chicago for the night. There was a farewell evening cruise and dance on the Odyssey, with fireworks and breath taking views over the magnificent Chicago Skyline. While it had rained for much of the day, the DJ said that we had chosen one of best night's of the year to be to seeing Chicago after dark: a fitting end to a fabulous Study Tour.

So in summary, the participants from 20 countries, a very lively and friendly group, learnt a lot not only from the excellent company visits but also from our daily interactions and the "bus lectures" given by some of the participants. The visits were truly enlightening and the high level of expertise and professionalism meant that we benefitted immensely from this experience. Many thanks must go the companies visited and their sponsorship of the Tour. Special thanks to Alan Brown the Chair of the Local Organising Committee and to Peter Greenhalgh and IFEAT for this highly educative and memorable Study Tour. Lastly, to Deneen Worthen our tour guide - she was superb - she managed all of us quite well and was very caring and helpful.

Photo left

Multnomah Falls was a spectacular natural wonder discovered during the tour

Article authours, Bhuvana Nageshwaren of Ultra International Ltd and Sandeep Tekriwal of P.T. Van Aroma



Photo right Harvesting during the 2016/17 season



Salvia sclarea

Eventually France has had a good season and expectations have been met after this year's harvest. It seems they produced around 8 MT more than last year's 16 MT, most of which was pre-sold with very little remaining. As a result of the pre-harvest sales average prices fell back towards the historical normal levels for this material. What the French producers will do next year is a little unknown but for now they have managed to keep the market a little more satisfied.

French clary sage is different to the Russian and Chinese qualities so unfortunately it does not help fill the overall global void still present in this area.

▲ Euro 145.00 /kilo



Lavandula hybrida abrialis

Reflecting on recent years we can see that there is little future for this variety as year-on-year output declines. Last year's production was down a further 15% on 2014. This year's was down 10% again. It seems there are still a number of end users who insist on this variety but in reality they are less likely each year to be buying what they think they are buying with volumes of real abrialis almost non-existent. Today there are little stocks at origin with most producers/farmers realising that there won't be too many more harvests ahead for this one..

L Euro 38.00 /kilo

LAVANDIN GROSSO OIL *France*

Lavandula hybrida

The final figures for 2016 production look to show a 20% decrease in the total output volume when compared to last year. This can be attributed to a lack of rain during spring and a hot early summer, which stifled grown in some areas.

That said, 2015 was a good year with production increasing on 2014 by around 5% so it is not expected that this decrease in harvest will have much of an impact in the overall supply. If anything, we may see some firming of prices once most of this season's crop is allocated, as there might not be enough to satisfy everyone for the next 12 months.

Le Euro 28.00 /kilo



Lavandula Officinalis

There was some mixed news across the French lavenders with a good 'Population' and 'Diva' harvest offset with some disappointing results for "Mailette and Matherone'. Overall the farmers are happy and the positive news helped ease pricing by around 15% but with the price gap between Bulgarian and French lavender widening, the French farmers may have to consider reducing further to remain an attractive option.

Fine Euro 160.00 /kilo

Margine Diva Euro 120 /kilo

Lavandula hybrida

There was a continuing trend from this year's crop showing that this variety is in decline and with it prices are likely to increase. Total production was no more than 30 MT. That said there is some good news, as recent new plantations will hopefully add new oil into the supply chain after the 2017 crops. New material is now available but demand is very high so expect a sell out in the coming weeks.

▲ Euro 55.00 /kilo +



AMYRIS OIL

Haiti

Amyris balsamifera

Haiti based producers have for a couple of years been unable to source wood from Dominican Republic after bans were put in place by the local authorities, limiting access to supplies. This has put a strain on the market as overall capacities have been significantly reduced and access to higher quality material is also limited.

It is unlikely that in the short terms we will see any relief to this situation and as a result prices are set to remain firm.

■ USD 55.00 /kilo

VETIVER OIL

Q Haiti

Vetiveria zizanioides

We are now entering the rainy season (September – December) which generally restricts harvesting and when many processors close down for annual maintenance work. This isn't welcome news to a market seemingly starved of supplies. It doesn't appear that volumes from Haiti have fallen; more that the market has increased putting pressure on a fragile supply chain. Until the start of the rainy season material was still coming through but as soon as it hits the market there is a battle by many to secure the oil.

Expect supplies in Q4 to become tighter until the new season opens in the New Year.

■ USD 260.00 /kilo

MY FAVOURITE VANILLA

by Colin Ringleib

My favorite raw material is vanilla. Vanilla is one of the treasures the New World, the Americas, provided to Europe. Used by the natives in Mexico to flavor their cocoa based beverage, vanilla rapidly grew into the world's favorite flavor. What makes it my favorite is a mixture of factors, including the growing practices, post-harvest development of flavor during curing, its universal role in flavorings and the commercial lessons it can offer to all who participate in natural raw material industries.

Photo top left Typical roots of the Vetiver zizanioides plant

Photo below Vanilla pods drying after harvest



Photo top right
Vanilla plantoflia flower



The vanilla orchid is a very challenging plant to grow to produce green vanilla beans even though it has found success being grown around the world. The original problem growers had to solve was although vanilla orchids grew outside of Mexico, they did not form the green beans. Ultimately it was traced back to the fact that in Mexico, a special bee was present with the right dimensions to properly pollenate the vanilla flowers. In other growing areas each flower must be hand pollenated, which means successful commercial growing best occurs where the costs of labor are very low.

The second interesting characteristic is the complex multi-step process required to convert a flavorless green bean into the vanilla bean with its wonderfully complex flavor and aroma. While much is made of its characterizing chemical vanillin, real vanilla is so much more complex and offers a flavor richness still difficult for flavorists to match. Blanching, sweating, drying, maturing, sorting and bundling over a six -month period develop the aroma chemistry required. Again this process is very labor intensive and if done improperly, a poor or worthless product is obtained. This process is still often done locally despite attempts to modernize and standardize the methods.

The third fact is the importance of vanilla, vanillin and related chemicals to the flavorist and perfumer. Most flavor blends benefit from its artistic addition. ¬Vanilla notes add richness and body to the flavor or fragrance, which is often not recognized as vanilla in the finished product. Vanilla is critically important in beverages, bakery, dairy and confectionary to name but a few food categories.

The last reason is probably an important lesson for everyone involved in natural aroma materials. For many years, the Madagascar government basically controlled pricing and availability of vanilla. Prices stayed stable and the market had the needed levels of vanilla beans from stocks held in Madagascar. Wiser international groups decided that this should change and stocks were liquidated and prices dropped a little. Then a tropical cyclone devastated significant amounts of the Madagascar vanilla crop. Prices shot up to levels more than ten times any historical norm. The high prices incentivized a number of other geographies to plant vanilla but it takes 3-5 years before new plantings yield vanilla beans. The very high prices and lack of supply at any price led users to reformulate their products and the demand allowed the flavor industry to create a range of new technologies which could deliver flavor properties very similar to that of natural vanilla beans. Once reformulation was successful, few users would return their formulas to the use of vanilla beans again. This second stage of the perfect storm struck as Madagascar production recovered, production in the new regions was maturing and market demand was significantly reduced. The excess supply saw prices crash, with most of the new supply locations being unable to sell their product and it has taken years for some equilibrium to begin to come back into a now smaller market. This highlights how fragile such markets can be, especially given the low system wide buffer inventory and the often imprecise supply/demand signals. This is then layered with the risk that users may substitute materials if price or availability becomes a serious issue.

Vanilla is a wonderful material that I hope will continue to be an important ingredient forever.

Written for IFEAT World September 2013

S INDIA

FLORALS

CITRUS



BASIL OIL HOLY

India

Ocimum sanctum

Prices have risen slightly in recent weeks as supplies at origin remain low ahead of the new season starting in November. Expect some further price increases in the coming weeks as it seems the demand has come early this year and with no carry over stocks, pressure is already on the new season to deliver.

■ USD 67.00 /kilo

Piper nigrum L.

Today the pepper market is stable with supplies at origin well equipped to support the market well into the new season, which will start in January.

■ USD 90.00 /kilo

Artemisia Pallens

This year's season started late and ended soon after with some highly disappointing results, which immediately resulted in escalating prices. Furthermore davanone contents where very low in comparison to usual standards. The next crop isn't until February 2017 so this one isn't going to get any better soon.

■ USD 700.00 /kilo +

LEMONGRASS OIL

India

Cymbopogon flexuosus

After a period of stability a few months ago supplies have again reached a crisis point with very little availability at the moment. Average production has been down for some time now but when it slows further or market demand picks up it quickly translates to higher prices as the whole supply chain is very weak. Hopefully some fresh production in the coming months can relieve some of the current problems but not many are optimistic.

▲ USD 20.00 /kilo

PALMAROSA OIL

♀ India

Cymbopogon winterianus

A lower output this season due to heavy rains has seen local oil stocks reduce, which has helped move prices back to a more attractive level for farmers to cultivate next year. Prices had fallen until the start of the year on the back of weak demand and over supply. Short term expect some difficulties. Next harvest early 2017.

■ USD 38.00 /kilo

LIME OIL DISTILLED KEY India

Citrus aurantifolia

Major projects continue to progress with a view to standardising the local fresh fruit market and increasing the capacity to receive more limes for processing. This will take time but it's likely to offer us more options for some small increased capacity during 2016.

Indian lime is a particularly good quality, similar to that of Mexican Key Lime but given current costs can be slightly more expensive. That said it is always good to invest in new origins and this one is no different. Better economies will come so it would be good to have this quality already approved and purchased.

■ USD 50.00 /kilo

CORNMINT OIL

India

Mentha arvensis

Last year we saw a 30% reduction on the previous year's output, most of which was planned due to the declining market demand. As a result, there was less carry over into this year's crop than you'd usually expect, estimated to be around 5,000 MT. Unfortunately, this year's crop has been poor and this time it wasn't planned with some suggesting output to be no more than 30,000 MT.

Prices are low which has disappointed

Prices are low which has disappointed farmers in recent years but it's hard to see how this one can recover considering the alternatives available in the market. Markets remain weak.

■ USD 16.00 /kilo

Mentha piperita

Of all the Indian mints, Mentha piperita holds the most optimism amongst the farmers. After a low yielding 2015 there was little carry over (approximately 40 MT) heading into this season. The additional plantings from late last year have help farmers produce around 350 MT this year with the market set to take a good slice of this volume.

■ USD 35.00 - 42.00/kilo

Mentha spicata

As expected from earlier reports, once again production is lower as farmers are discouraged from investing in this product due to weak market demand. There was an anticipated 50 MT carry over from the 2015 season, which will be added to the 225 MT produced this year.

Indian oil is 10-15% cheaper than Chinese but although competitive we can expect markets to remain flat for the foreseeable future.

▲ USD 25.00/kilo



Photo top left

Peppermint (Mentha piperita)
close to harvesting 2016



Photo bottom left

Spearmint (Mentha spicata)
before harvesting 2016

CINNAMON LEAF OIL Sri Lanka

Cinnamomum zeylanicum Nees C

Despite new production starting in May the market is still short. There were no real carry over stocks going into the season and demand within the local Sri Lankan markets for raw materials has kept pressure on supply and with it prices. As always during times of short supply we are seeing many more examples of adulterated products in the market so it is advisable you remain vigilant to any possible changes in quality. Try to stick with your trusted suppliers during this time.

L USD 32.00/kilo

CINNAMON BARK OIL *Sri Lanka*

Cinnamomum zeylanicum

We are currently mid-harvest season with the season ending in January. Supplies have remained constant throughout the year as well-managed plantations maintain continuity of supply for this oil. This season looks to be healthy and no major changes are expected in the foreseeable future.

■ USD 295.00/kilo

INDONESIA ECONOMY, WEATHER & MARKETS

with P.T. Van Aroma 'Celebrating 10 Years'

How is a local tax amnesty in Indonesia impacting on your essential oil prices? Well it's quiet simple. By attracting local business and residents to return monies invested overseas at a reduced tax rate, the Indonesian government is hopeful that the increased tax revenues will stimulate further growth in the economy, which in turn will strengthen the local currency, the Indonesian Rupiah (IDR). This strength means that when converted into US Dollars it takes more dollars to buy the products, which results in your prices increasing.

This initiative has been spoken about since the turn of the year and has recently been implemented. It is because of this we've seen a sudden strengthening of the IDR, which is likely to continue throughout the course of 2016. Of course currency can be influenced by other global factors and of course by the performance of the US Dollar itself, but based on what we know locally we can expect further strengthening in the months to come.

The IDR has appreciated by around 13% and is having a direct impact on Indonesian export prices. This trend is set to continue over the coming months largely due to the government's tax amnesty.

Interested to understand more? Here's what 'Indonesian Investments' had to explain:

When we put this into some perspective it is estimated that within months of the amnesty Indonesia could see an increase of up to IDR 1,000 trillion (approx. USD \$76 billion) in funds according to government estimates.

It is believed that a whopping IDR 11,450 trillion (approx. USD \$867 billion) is invested/banked outside the country undeclared, which is nearly the same size as Indonesia's gross domestic product (GDP).

The difference for normal taxpayers is significant. This new Bill allows individuals to bring money back into the country at 2% tax whereas a normal income tax rate in Indonesia would be as high as 25% (still not so bad some may say!).



Indonesia's tax revenue realization in the first half of 2016 was disappointing. According to the latest data, Southeast Asia's largest economy collected a total of IDR 518.4 trillion (approx. USD \$39.6 billion) worth of tax revenue (including customs and excise) in the first six months of 2016, down 3.3 percent (y/y) from tax revenue realization in the same period one year earlier, and only 33.7 percent of total targeted tax revenue (IDR 1,539.2 trillion) set in the revised 2016 State Budget. The disappointing performance is mainly due to weak tax income from the oil and gas sector. For taxpayers and small to medium sized businesses that reveal assets overseas of up to Rp 10 billion will be

charged a redemption fee of 0.5%, while those that reveal more than Rp 10 billion will be subject to a 2% charge. Taxpayers willing to repatriate their assets from abroad will be granted a 2% redemption rate for July - September 2016, 3% for the period from October to December 2016 and 5% for January 1, 2017 until March 31, 2017.

Finally, taxpayers who declare their assets abroad without repatriation will cost 4% for the period July-September 2016 6% for the period from October to December 2016 and 10% for the period January-March 2017.

NO LONGER JUST A COLLECTOR

2016 is an iconic year for our sourcing in Indonesia as our partner, P.T. Van Aroma celebrate their 10th year of business.

Once considered to be just a collector, Van Aroma can now boast a state-of-the-art facility in Jakarta which produces many different essential oils and natural derivatives. They are also able to say that in 2015 they became Indonesia's largest exporter of Patchouli Oil.

Patchouli is one reason why the business in Indonesia is no longer simply about collecting raw materials and steam distilling. Mother Nature has provided us with a new challenge as traditional qualities continue to change with each new planting cycle, which means bringing the quality up to industry standards involves a more sophisticated process. Given the fact that our industry cannot accommodate such irregularities in quality, our continued strategic investment in Van Aroma's infrastructure will not only allow us to build our capacity and offer new exciting derivatives, but also it will ensure consistency in the quality of the products we supply to our customers worldwide. And it goes well beyond patchouli!

Visit <u>www.vanaroma.com</u> for more information on their recent expansion.



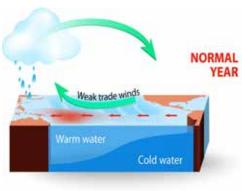
| Oil production (MT) | 2014 | 2015 | 2016 |
|---------------------|-------|-------|---------|
| Citronella | 550 | 700 | Growing |
| Clove | 4,000 | 4,500 | Stable |
| Ginger Fresh | 7 | 10 | Decline |
| Massoia Bark | 15 | 20 | Stable |
| Nutmeg | 400 | 350 | Decline |
| Patchouli | 1,000 | 1,400 | Decline |
| Vetiver | 25 | 20 | Decline |

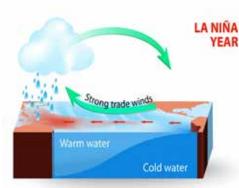
WEATHER

Last year we wrote about the negative effects of the largest ever recorded El Niño, which brought some severe droughts to the region. Sadly, this year we have the opposite as significantly higher rainfall during the dry-season is causing mass devastation. The dry-season usually lasts from July to early September but Indonesia has been experiencing the exact opposite.

This time last year the news reported the devastating forest and peat land fires, which burned an area the same size of Macedonia (an area around 25,000 square kilometers), causing smoke to engulf large areas as far away as Singapore. This year the excessive rains are causing localised floods and landslides already resulting in many deaths.

We know these effects are not new. These are challenges the region has faced throughout its history but they are certainly becoming more extreme and





frequent. We now understand the weather in more detail, which is why there is more information on the causes of extreme weather and a greater appreciation of the impact it has in a global commercial world.

Farming in remote land areas during these times cannot only be dangerous, but also will massively slow down raw material collections, potentially inflating prices due to shortages in supply. It is something that one way or another we face year on year and depending on the global market conditions, including the strength of market demand, their impact can go from unnoticeable to destructive.

Here is a typical, basic, weather pattern seen during a La Niña season. You can see the strong trade winds pushing across the Pacific create a prolonged wet period for Indonesia that can last months at a time when it is typically dry.

CAJEPUT OIL

Melaleura caiumut

We are generally seeing a return to good supplies, only recently slowed down by the local weather and religious holidays. After a long period of unsustainable supplies of quality material we have been pleased with the recent progress of supplies, which we hope will continue to improve throughout the year.

■ USD 25.00 /kilo

CLOVE OIL

Eugenia caryophyllate

Supplies have remained fairly stable during what has been a very wet rainy season. Clove needs the rain but there is a limit to how much you want when trying to harvest and then dry before distillation. That said, overall the picture remains a stable one with no major changes expected in the near future.

Leaf USD 11.00 – 14.00/ kilo; Bud USD 23.00 /kilo; Stem USD 15.75 /kilo; Eugenol USD 15.00 /kilo

MASSOIA BARK OIL

Cryptocaria massoia

Overall supplies in 2015 improved and continue to improve modestly in 2016 but this market sector lacks controls and continuity. Supplies are ad hoc and qualities need to be re-worked constantly in particular from some of the newer suppliers offering material from Irian Jaya province. Here the quality lacks maturity and with it the yields are particularly low which is in some ways confusing an expecting market that wants to believe this is a positive change in the market. Efforts are in place to improve the quality and continuity long term but it will take time to find the reassurances we all like to have when dealing with these premium natural ingredients. Today prices remain firm but stable.

L USD 400.00 − 700.00 kilo

CANANGA OIL

Cananga odorata

The situation is similar to that last reported and despite this being a typical harvest period supplies are yet to improve. We hope by October this may have changed and additional supplies start to come online.

Demand continues to be high for this product, as you simply cannot buy any volumes with the market today being based on pure speculation. As such, today's prices are at an all time high and will rise based on who wants what and when. We hope to see some fresh stocks soon but it's unlikely to have any immediate impact on price as there is a waiting market for some significant volumes.

■ USD 110.00 /kilo

CITRONELLA OIL

Cymbopogon wh

As with other products the continued rains are negatively impacting harvesting and as such supplies have slowed. This at a time when Indonesian citronella oil has been experiencing fantastic growth across the world as once again Java material becomes a preferred choice for buyers everywhere. The weather coupled with the appreciating local currency has meant that prices have increased around 5% in the past couple of months.

▲ USD 16.75 / kilo

GINGER OIL FRESH

Zingiber officinale

There is a lot of interest in this product at the moment as the market continues to assess the viability of this quality as a long-term option. It has been accepted in a number of new and interesting applications. Prices remain steady but supplies are not as consistent as they could be. Hopefully more controls coming from within the supply chain will improve this over the next months.

L USD 110.00 /kilo

MACE OIL

There is certainly a knock on effect from the current situation impacting the supply and pricing of nutmeg oil but it is less damaging for mace as the markets are smaller and can withstand some short-term disruptions in supply. Of course local prices have risen and coupled with the appreciating currency small but hopefully manageable price increases have been seen.

■ USD 95.00 /kilo

PATCHOULI OIL

Pogostemon cablin

The effects of additional rains since June are not as big an issue for patchouli as they are for many other locally produced products due to the fact that patchouli generally grows on hillside slopes so the waters drain away. Where it does become a problem is when farmers try to dry the leaves outdoors after collection. The rains can slow down the drying process and in such times we also start to see a negative impact on quality. That said we have enjoyed a period of stability for this product and following the main producing season supplies are good which will be needed to fill the pipeline in the coming months with

demand forecast to be a little stronger than in recent times due to the attractive and stable prices. With supply and demand overall well balanced for now the only impact on export pricing over the coming months is likely to be due to any additional appreciation of the Indonesian Rupiah.

Whilst this is the over riding story for Sulawesi material, supplies from Sumatra and Java are very low. We had hoped that things would improve last month but the rains have put a stop to this and it may be some time before supplies begin to improve.

■ USD 45.00 – 60.00 /kilo

VETIVER OIL

Vetiveria zizanioides

There could be a little light at the end of what's been a very long tunnel but at this stage it isn't enough light to start any celebrations.

The conditions locally and globally have been terrible for some time now with supplies only coming in small amounts with questionable qualities at times. As such prices have soared and are likely to continue to remain firm for some time even with the prospect of seeing some fresh supplies from October.

The continuing rising prices do appear to have stalled but remain extremely firm, perhaps 30% higher than where they should be. However, even with this renewed optimism expect prices to stay high for the foreseeable future as there is a lot of pipe filling to be done in the market before we get to a balanced supply/demand situation.

■ USD 350.00 /kilo +

NUTMEG OIL

Myristica fragrans Houtt

Collections have been slow for a few months and we are seeing overall supplies dwindle at a time when demand has certainly returned. Today's situation is a result of the events from the past 18 months, which have seen this product yo-yo in supply and pricing somewhat uncontrollably. Stocks around the world have started to be depleted and as many return to source for new contracts alarm bells have finally started to ring if they hadn't already.

Given the additional and unexpected rains in the main producing areas during June and July we have seen a period of even fewer collections. Farmers are unable to collect in such conditions and have chosen to leave the fruits on the trees to mature which will

later be used for the spice market and not the oil market. Thankfully over the past couple of weeks, the conditions fueling an almost daily price increase have weakened giving us all a little bit of breathing space to assess the market. It seems we've now hit a new price level which could be seen as firm based on the past 12 months or average if you look at the past 24 months! Whilst today the price increases have slowed a closer look at the market would suggest there could be a continued shortage of raw material into the new year with many producers not wishing to commit to any 2017 contracts leaving a few end-users worried about what may happen next. Hopefully a period of calm, but that may be too much to ask for on this one!

▲ USD 72.00 /kilo ±

MY FAVOURITE **NUTMEG**

by Ravi Sanganeria

Nutmeg oil, my favourite, is unique and it reminds me of a holiday scenting. Combining nutmeg essential oil (EO) with orange EO in a room spray can provide a one-two punch of motivation for the early-morning sleepies. Nutmeg EO smells rich, warm and spicy, making it especially nice during cooler weather. If you love autumnal spicy scents, try mixing with vanilla, ginger and / or cinnamon EO's.

What fascinates me most about this simple holiday pleasure is where nutmeg comes from – both geographically and botanically. And that takes me to Eastern Indonesia, where the vast majority of the world's nutmeg is cultivated.

The fruit of a tall, tropical tree, Myristica fragrans is the source of not just one, but two aromatic spices – nutmeg and mace. Nutmeg is actually the seed from the fruit of the tree, which can grow to a height of 50 feet and live up to 75 years. Although the tree bears some fruit year round, the main harvests are concentrated around March/April and October/November.

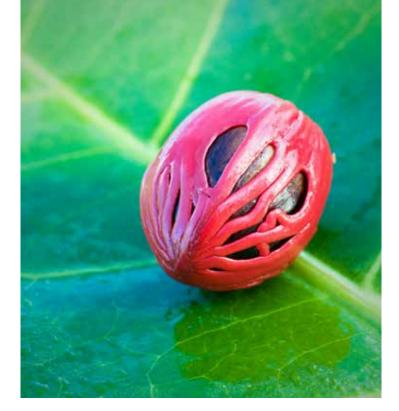
The annual world production of nutmeg is approximately 6,000 tonnes, relatively small when compared to the other holiday favourite – cinnamon. Indonesia grows about 75% of the world's nutmeg, while Grenada is another major producer.

Native to the famous Moluccas Islands, located in Eastern Indonesia, the first nutmeg trees grew on the eastern islands of Ternate and Ambon. Today, the majority of nutmeg trees are farmed in a series of small islands just north of Sulawesi, with one of the major islands being Siau. All the islands still border the Molucca Sea, and



"Nature was indeed at her artistic best when she created the nutmeg, a delight to the eye in all its avatars, from the completely garbed to nudity."





are located within 5 degrees north and south of the equator. Many have beautiful terrain, with lush green volcanic mountain ranges. Nutmegs grow best in elevations of 1,000 to 2,000 feet, and thrive very well in the nutrient-rich volcanic soil. The island of Siau has a large volcano, which has been very active recently, making a visit there interesting to say the least! The only way to get to this island is by an all night ferry, in a pretty rough sea setting. Imagine arriving on this island exhausted, somewhat sea sick, only to be greeted by a very active volcano.

The nutmeg tree is full of yellow fruit, similar in size to nectarines. The outer portion of the fruit – the largest part – is fleshy and has the consistency of any unripe nectarine. It actually tastes like nutmeg!

This part of the fruit is often used for making preserves and syrup. When the fruit fully ripens on the tree, it naturally splits open, then falls to the ground where the farmers collect it. Breaking open the fruit reveals a lacy, scarlet red membrane that envelops a dark brown, brittle shell. The membrane is called the aril, which turns a dull red-orange when sundried by the harvesters. The dried aril is mace, which has a similar taste and aroma to nutmeg, but is slightly more delicate. After the mace is removed, what remains is the hard outer shell covering the nutmeg.

The nutmeg is extremely aromatic and has one of the highest amounts of volatile oil of all the spices. Moreover, its distinct smell makes it ideal for flavouring of both food and cosmetic products.

I have a deep-seated fascination, passion and affinity for this spice. It permeates every aspect of my life. Nutmeg reveals the sensuality when used properly and creates an intensity, harmony and complexity.

Nutmeg to me is seductive and it gives me subliminal pleasure and drives my work and gives me focus, tests my ambition and occupies my leisure time. In short, it is a total obsession.





Citrus limon (L.) Burm. F.

Whist the 2015/16 season was one to forget for the Italians there is a greater sense of optimism ahead of the 2016/17 season, which should start with the Primofiore type in November. Early estimates suggest there could be a 20-25% increase in total fresh fruit volumes but how much of this the processors see is another variable all together.

The reason for the squeeze on lemon oil supplies during this year has been the fact only 80,000 – 90,000 MT found its way into the processing markets, nowhere near past averages, leaving no carry over of stocks into this new season (starting November). Even with an increase in supply it may not mean better prices as the local farmers have become accustomed to higher levels and are reluctant to give up this position. Processors will be looking to challenge local farmers on these prices as they are certainly causing their oil and juice markets to suffer. To put it into perspective, Spanish lemons are twice the price of Argentinian lemons and Italian lemons are 3 times that of Argentina's!

Italian fruits hold a premium in the export market as well as there being a high demand domestically. Such is the demand for lemon in Italy or on lemon from Italy, Italy's net imports have increased significantly in recent years. Last year's Italian fresh lemon production was down 2% on the previous year, with imports from Spain (55%) and Argentina (21%) increasing to support the demand.

Italy's MY 2014/15 (November/October) lemon imports reached 126,399 MT, mostly from Spain and Argentina, accounting for 57 and 21 percent of total imports, respectively. In MY 2014/15, Italy exported 39,640 MT of lemons, a decrease of 11 percent compared to the previous year, mainly because of reduced volumes to Germany (-25 percent), the leading destination for Italian lemons, accounting for 30 percent of total exports.

▲ EURO 36.00 / kilo

Citrus reticulate

No significant change to that last reported, namely prices remain firm amidst a shortage of supply and a strong demand. The 2015 crop was 15% less than that of 2014, continuing the decrease we've seen in recent years. This is due to farmers turning their attention to other trees, as the cost of mandarin harvesting and cultivating is too high. Of the 17,000 MT crop estimate, around 10,000 MT will go for processing.

▲ EURO 35.00 /kilo

Citrus sinensis

Following a good season and low demands from the fresh fruit markets there is good availability of fruits for processing. The only downside is the intensity of colour for blood orange juice, which is not as good as in the past due to warmer climates in January and February. Usually colder nights during the winter months help pigment the oranges to give that intense colour. Generally prices are stable. However there is a premium charge for good quality material due to increased global demand.

EURO 8.50 /kilo

LIME OIL DISTILLED (KEY)

Citrus aurantifolia

Mexico

We're at that time of the year where we're watching the weather forecasts to see which Pacific or Gulf of Mexico hurricane will hit Mexico next. Already tropical storm Earl hit Mexico earlier in August, followed by another storm affecting the major lime-growing region of Veracruz. As we write, Hurricane Newton was making landfall. That said, this is an annual challenge so unless the main growing area take a direct hit the only issue to note is that at this time of the year the lime season slows down to its end around early October. That means fewer limes available in the market for processing which depending on how the earlier season (June/July/August) has performed, allows us to gain some insights into how the market will respond over the coming months.

A key factor this year has been a growing demand for fresh fruits resulting in around 90% of Key Limes heading into the fresh markets leaving just 10% for processing. Cold temperatures during winter delayed the blossoming and the following heavy rains stifled growth of the fruits. These issues combined will result in around 2,400 fewer drums of lime oil being produced this year, which is a 30% reduction on recent averages. As a result, prices started to rise in July when the market first heard this analysis leaving us today around 35% higher than this time last year.

If you dig further into the market demand, we can see that there are still many major end-users yet to make their 2017 commitments so when they do any remaining volumes are likely to be even higher priced.

In summary, we have a delicately balanced supply situation and a trend of rising prices as we start the long off-season period. This is never a good sign.

■ USD 45.00 /kilo+

MEXICO TODAY'S CHALLENGES

Cyclical event plague Mexican producers

Since July we have once again been reading that Mexican Lime production will be shorter than usual and with it to expect higher prices and more difficult market conditions. It seems like we've heard it all before but the challenges are very real. Some are seasonal whilst others are longer lasting. When they all combine, as they have this season, we are faced with bigger problems.



CHALLENGE
Hurricane Patricia

Mexico thought it had dodged a bullet last October when Hurricane Patricia stormed through the country and seemingly did little damage. Hurricane Patricia was the second-most intense tropical cyclone on record worldwide, with a minimum atmospheric pressure of 872 mbar. It hit the lime growing regions of Mexico between October 20th and 24th 2015 but thankfully the results, whilst significant, were not catastrophic as it came after the peak season period. That said there was some longer-term damage as it destroyed early blossoms and the weather patterns that followed didn't allow for any real recovery. However, it wasn't this 4-day event that left the most significant mark on today's issues but the following 9-month long problems brought upon us by the effects of El Nińo!

It's never easy to assess the on-going effects of a weather system. In fact, Mexican producers had been keen to play down any negative effects El Nińo may have had, but today as we enter the new season the full impact of climate change is being felt.

CHALLENGE El Nino & La Nina

You may have heard about this on the news and forgot to think about the possible effects on our markets but there is almost no doubt that during this particular event we have seen some disruptions to our supplies. For Mexico this lasted from October 2015 to June 2016.

When and where El Niño strikes is hard to predict. Generally, it brings changes to rainfall and temperature averages around the world but other recent El Nińo events can show us some patterns.

Said to be the largest event since 1996, Mexico has suffered from more extreme storms and generally warmer weather during this latest El Niño season.

There are now signs that this event is coming to a close but officially it isn't over yet. And then what next?

It is expected that from September/ October we could see a quick transition to a La Nina event as sea surface temperatures in the central Pacific at the equator will cool to more than 0.5°C below average.

This is unlikely to be the solution to El Niño but more the potential start of the next problem. La Nina will bring cooler conditions and a lack of rains, which based on historical experience, could lead to droughts. It could also bring strong winds later in the year. Interestingly, but not too relevant to Mexico, La Nina will bring a strong tornado season and more Atlantic hurricanes.

So Mexico should dodge bad hurricanes next winter (October – January) but could have some drought conditions to deal with.







CHALLENGE Disease

As we have identified, climate change in some regions of Mexico has almost halved citrus production. In addition to climate change and the effects of this last El Niño, Mexico is also fighting against a number of diseases like HLB (citrus greening) also called yellow dragon plague.

It is hard to estimate today how much area is still affected by the disease, which became prevalent back in 2012 but it's an ongoing battle. Only 4 years ago it was thought that 80% of citrus plantations in Colima and Michoacán had been affected by the disease, which significantly reduces fruit yields.

As recently as January 2016 the citrus sector in Tamaulipas stated the current risk of yellow dragon was high with many fearing a return to the devastating effects of 2012. Today there is continuous assessment to detect any changes in conditions as early as possible.

CHALLENGE

2015 average.

Fresh Fruit Demand

Local fresh fruit prices have increased 4-fold since the turn of the year, peaking in June. As we entered July we saw a little softening but prices remained 2-3 times the

Helped by a relentless hot period caused by El Niño, demand for fresh fruit has soared. This season's shorter harvest period, lower yields and higher demand for fresh fruits are expected to lead to as much as 50% less fruit being available for processing.

Limes in Mexico are like water for the rest of us. Hardly any food or drink goes without a slice or a squeeze of lime (named as limon by the locals). They simply can't live without it.

At the end of April prices of local fresh fruit were up over 40% and as the headlines in the Mexico News Daily said 'Lime prices soar but they've been higher' – a threat that we should all prepare ourselves for.



Photos left page. From top to bottom:

Early season and the flower buds start to appear

Lime fruit growing on the plantation

Photos right page:

Vast plantation in Mexico

SUMMARY

There is no doubt that the past 12 months have been challenging for Mexican producers and there is no quick solution. We will be faced with a shortage in the market over the coming months and as always, this is likely to mean higher prices.

Other producing countries are unlikely to support such gaps in the market but no doubt it will prove an opportunity for some emerging markets like India to push their quality to the international markets. India is the largest producer of fresh limes in the world. Strong efforts are being made to bring their lime oil onto the global market but so far progress has been slow.

These global issues are compounded with similar news from Peru (Key Limes) and Brazil (Persian Limes) where both have suffered with their own share of climate issues.

In Brazil it's now winter so the output is much lower but the demand for fresh limes is higher than ever. At this time of year, the demand comes from Europe where prices for supermarket fruits are already 20% higher than the average for the year, with further rises expected soon.

None of this is new. Whether it is one of these events or another there have been similar stories from Mexico for many years. Back in 2014 Aljazeera published the following news article https://youtu.be/2dFL0IKVNKU, which also covered yellow dragon plague and 2013's Hurricane Manuel. Add to this the effects of 9 months of El Niño and you understand how difficult today's situation really is.

The strong demand and production issues are other examples, which give further thought to the overall impact of growing demand for naturals were we simply can't keep up on the supply side.

ROSEMARY OIL *Morocco* & *Tunisia*

Rosmarinus officinalis

This one is still precariously balanced even after the recent harvest. Reports from Tunisia suggest many areas of past harvesting are now occupied by the local military following recent terrorism scares and the 2016 season was 3 weeks shorter due to the start of Ramadan. This meant that the season closed 7th June and an assessment in July/August suggests most local stocks are already sold once again leaving the markets short.

■ USD 60.00 /kilo





MANUKA OIL [→] New Zealand

Leptospermum scoparium

Supplies continue to increase catering to the markets growing enthusiasm for this special oil. Investment by the main producer in the region has allowed for more efficient harvesting and distillation processes to take place to speed up production and ensure there are reserves of stocks to ensure continuity of supply.

MZD 600.00 /kilo

BASIL OIL METHYL CHAVICOL

Ocimum basilicum L

Vietnam

Following the close of the last season prices have started to soften with reasonable volumes now being available. Average qualities have also improved owing to a good crop and better availability.

■ USD 90.00 /kilo



CABREUVA OIL

Paraguay

Myrocarpus frondosus

Supplies continue to be short but, against a slow down in sales, prices have weakened in recent months. It is unlikely that supplies will improve in the short term so future pricing will depend on market demand over the next months.

■ USD 40.00 /kilo

GUIACAWOOD OIL @ Paraguay

Bulnesia Sarmientoil

Production continues to improve with good stocks now available at origin. This should remain in place for the rest of 2016.

■ USD 22.00 /kilo



PETITGRAIN OIL @ Paraguay

Citrus aurantium ssp

There has been an on going situation since early 2015 with the supply of petitgrain oil. Affected by the current El Niño event, supplies have fallen significantly below market demand and as such prices have increased almost month on month for the past year. It is not expected that the situation will improve soon as there is typically no production in August and September. The main crop will start in November depending on the weather conditions. All things considered you can expect this shortage in supply to continue throughout the rest of the year.

▲ USD 55.00 /kilo



ARTEMISIA TAURICA OIL *Russia*

Artemisia vulgaris

Whilst it is still too early to forecast the 2016 crop as it only began in September an early survey of the accessible growing areas suggests there is likely to be less areas to harvest. There is an added complication of where this plant grows as it is cultivated in the South and South East of Ukraine, where lasting conflict remains and where accessing the territory and crossing borders continues to be over complicated.

Today there is no material on the market, which in turn is putting some pressure on prices

■ USD 75.00 /kilo

Anethum graveolens L

The season ended with a healthy crop with good yields. As a result we expect prices to remain stable as the markets are well balanced.

■ USD 40.00 /kilo

FIR NEEDLE OIL @ Russia

Abies sibirica Ledeb.

The market is still faced with the same situation as forestry restrictions mean there is a significant reduction in harvesting with processing plants based in Russia reported to be running at less than 50% capacity.

Material from other Baltic states is supplementing supply but this quality is slightly different, however, under the circumstances very much approved by most.

Prices remain firm and are likely to remain so in the short-term despite the spring/ summer season usually bringing about fresh supplies. However, the new season started very late so the benefits are only just being seen and they're not as significant as we would have liked.

■ USD 36.00 /kilo

Lavandula angustifolia

There are only a handful of plantations left in this region that continue to be harvested for oil. Year on year we have seen a decline in production with little or no real investment in new plantations for some time. Also, the global landscape of lavender is changing due to investments in other parts of Eastern Europe.

That said, the Russian quality is still desired by some and with only a few tons available from this season there may be the case that there is now a premium to be paid for this quality.

The harvesting that did take place during July and was successful but limited. Unlike other lavender oils, expect prices to remain similar to those of last season.

L USD 80.00 /kilo



CORIANDER SEED OIL

Coriandrum sativum L. 3 Russia

The season started early and appears to be very healthy. Supplies are plentiful but processors are being vigilant so not to over supply the markets with fresh oil. Seeds can be stored and distilled over the next months so there is no rush to flood the market, which has been relatively quiet in recent months. This is a long way from a couple of years ago when supplies became very difficult after a bad season, local speculation and the Ukraine Russia conflict began. Whilst everything is looking better today on the agricultural side there remains plenty of factors, which could change the dynamics any time, including the political landscape and the local competition dynamics. For now, we can enjoy some more competitive prices and hope this period of stability is sustainable on all fronts.

▲ USD 60.00 /kilo

CORIANDER HERB OIL

Coriandrum sativum L. ② Russia

Heavy rains around the main harvesting period significantly reduced the amount of oil that could be produced at this time. All precontracted material will be satisfied but there is little chance of much carry over so this in turn could put some pressure on the market in the coming months. Today's advice is to ensure you have cover until July 2017 to avoid any price hikes during the non-season.

■ USD 85.00 /kilo



Previous years have been kind and constant for the South African citrus growers but 2016 will be very different. One producer offered us this quote, "Most of the processors are claiming that this is the worst crop and yield for 20 years". Having said that the official data doesn't look too bad. Not great, but not catastrophic. However we cannot always quantify oil yields from fresh fruit output.

LEMON OIL South Africa

Citrus limon (L.) Burm. F.

If there is a positive way to look at the South African lemon situation it could be to say that it is better than orange, but that will be no consolation for most farmers who are between 20-30% down on their typical volume expectations.

The 2016 season began in May but the combination of hailstorms and the previously seen drought conditions have combined to create a hugely disappointing crop.

It is estimated that there will be a 30% reduction in the amount of fruits available for processing, which based on the usual 60,000 MT would suggest no more than 42,000 MT of fruits will make it to the factories. Previous estimates suggested that figure would be closer to 20% so the situation appears to be worse than first thought.

Late rains have improved the prospects for the 2017 crops as prior to this the USDA had "forecasts that the impact of the drought to all the citrus production areas could be worse off in the 2016/17 MY if winter and summer rains are below average". It's still too early to assess how these recent rains will transpire into a more optimistic picture.

M N/A

| Citrus Type | Harvest Period |
|-----------------|-------------------|
| Navel Orange | June to July |
| Valencia Orange | July to September |
| Lemon | July to September |



ORANGE OIL

South Africa

Citrus sinensis

Different state departments seem to have contrasting views on the performance of this year's crop than most of the producers we speak to who claim to have seen up to a 50% reduction in yields for the season. However, the CGA (Citrus Growers Association) has recently quantified figures in relation to the last harvest performance and derived that Valencia orange crop was down 12% on what was a record crop in 2015

This difference is likely to be in what we're comparing with the CGA looking at fruit crops and the producers looking at the juice and oil yields they're getting from the fruits. Overall there is no doubt that the picture is fairly bleak.

It wasn't all bad news as the Navel crops yielded 2-3% higher returns than on 2015 thanks mainly to the output in the Western Cape area.

The USDA summarised their data in July as "South Africa's production is forecast down 5 percent to 1.6 million tons. Exports are expected to be down 80,000 tons but still account for over 25 percent of global trade. The European Union and Russia remain its largest markets."

"The impact of the drought and hail damage is anticipated to have a greater effect in the production areas of Limpopo resulting in decreases in the 2015/16 MY production of oranges by 5%."

M/A





Photos from top to bottom:

Baobab tree at sunset - Oil is derived from the seeds of the Baobab fruit

Tagetes flower in full blossom in South Africa

Photo left:

Marula fruits harvested and ready for proces



Tagetes erecta

Following good early rains, the last crop in June was very healthy ensuring that today, there are good supplies at origin. Prices have been stable for some time but with supply now outweighing demand it has become a buyer's market.

■ USD 160.00 /kilo

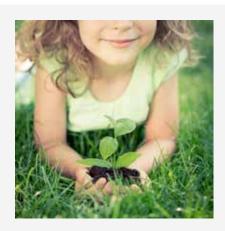
TEA TREE OIL South Africa

Melaleuca alternifolia

There have been suggestions that in 2016 South Africa will produce more tea tree oil than in previous years and may even 'quadruple' production over the next couple of years! New plantations are in place for both conventional and organic material, which will allow the South African producers to standardise their qualities better than before. Although dwarfed by Australia's dominance there is no doubt South Africa will continue to be a viable option for those end users looking for a different consumer story.

This year's harvest started in July and will conclude in October.

■ USD 45.00 /kilo



SOMETHING NEW FROM SOUTH AFRICA.....

Baobab Oil

This Southern African oil continues to surface as a newer fixed oil, with unique skin care properties. Known to be high in Omega 3, 6 and 9 fatty acids as well as Vitamins A, D and E, baobab oil is used in various cosmetics and personal care consumer products. The oil has historically been limited in supply but further quantities of this oil are now available. Just ensure that when sourcing suppliers must include an assurance of sustainable harvesting practice for the baobab seeds.

Marula Oil

Marula is still perceived as a slightly exotic fixed oil and as a result there is still limited production. Community projects continue to play a role in the supply of the material. Quality and consistency issues remain and are being addressed on an on going basis. Current supply meets existing demand but with the potential for new applications, there is the ability to lift production to meet increased demand accordingly.

Kalahari Melon Seed Oil

This is a new fixed oil from Southern Africa. Used mainly for cosmeceutical applications, along with applications in baby care products. Larger quantities have now come online with new applications now being researched.



LAVANDIN SUPER OIL

Spain

Lavandula hybrida

This year's August crop was somewhat better than in 2015 and there are some supplies still available. Prices are always 10% higher than the French but then again, many see the Spanish quality as 'different' so one shouldn't always compare the two products.

As with recent trends, it could be that once supplies dry up, which usually occurs later in the year, prices could rise in the New Year. That could prove a factor earlier this year with the French (who are the largest producer) suggesting their total output will be 10% less (down approximately 120 MT).

Euro 30.00 /kilo

Lavendula latifolia

An overall assessment of the market is proving hard to come by as those farmers with oil are not committing to any prices or suggesting what may have been produced. This is most likely an attempt to add some additional pressures to the market to see what prices are able to be achieved.

Spain

We would estimate there is around 5 MT amongst some producers. Whatever happens, these 5 MT will not go far enough to satisfy the market so pressure will remain on prices no matter what can be agreed in the short term with the farmers.

L Euro 110.00 /kilo

Lavandula hybrida

This year's crop has been poor and we are already in a situation were almost all stocks at origin are sold. Expect prices to firm further in the coming weeks.

▲ Euro 49.00 /kilo



CYPRESS OIL

Spain

Cupressus sempervirens L.

The markets are stable with good supplies at origin. This is not expected to change any time soon. Only if other Spanish products could be the same!

Euro 28.00 /kilo



ROSEMARY OIL Spain

Rosmarinus officinalis

There is no let up in the supply issues that have prevailed for some time now. Small batches are irregularly available and when they are available the price is as much as someone is prepared to pay.

Euro 60.00 /kilo

Thymus zygis L.

The June/July crop was small and quickly sold as the on going challenges for the market continue with this oil. It is unlikely that we will see any external influences that may help this situation so as time passes between now and the next crop in June 2017, prices are likely to continue to firm.

Le Euro 145.00 /kilo

Citrus limon (L.) Burm. F.

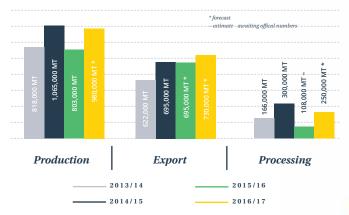
Ending in August, the 2015/16 was in no way a good one for the Spanish producers with fruit and oil volumes dropping significantly on previous years. Although the figures for 2015/16 were in the end revised up from earlier estimates of a 35% decrease, it still ended with a 25% reduction in total fruit production, which put pressure on European supplies of fresh fruit and with it availability for local processors. Ailimpo advised us that the season closed at 802,680 tons, down over 250,000 tons on the previous year!

The lack of availability meant fruit prices rose and with consumer demand growing around Europe processors had to pay a premium to secure fruit stocks, resulting in higher end product prices. Spain accounts for over 80% of EU production of lemon oil so when they suffer, we all suffer.

Now as we look towards the new season, which should start this September, the outlook is much more promising with many expecting Spain to bounce back. Of course, much of this optimism is still very dependent on the winter - with last year's poor season being owed to a lack of a winter! Nice news for the holiday makers but not for the citrus industry! The increase in 2016/17 forecasts is in part due to new and well managed plantations coming on-line. Ailimpo's early forecast suggests 980,000 tons production, which will be a 22 per cent increase on last year.

Whilst this is good news for the fresh lemon market it is too early to understand how this will improve the prospects for processors buying lemons at reasonable prices in order to once again compete with their oil on the international market but at the very least it should help.

SPANISH LEMON HISTORY



Based on the figures presented, you can see how the issues during the 2015/16 season put pressure on the market but how these recent forecasts may assit recovery in the coming year:

Le Euro 29.00 - 31.00 /kilo

Citrus sinensis

Spain has experienced high temperatures and little rain during the summer, and for that reason the country should have a normal crop but with quite a lot of small-sized fruit, which isn't always a good sign for the processors.

The lower amount of fruit from South Africa has also impacted on demand for the Spanish Valencia type around Europe with data from the Citrus Growers' Association of Southern Africa showing shipments so far this season being down 2 million boxes year-onyear at 20.8 million (around 10%).

Furthermore, there has been a spike in demand from South America for fresh Valencia fruits with an increase in exports expected to start in January 2017.

What all this means for the processors is lower fruit yields and higher prices so we shouldn't be expecting to turn to Spain to solve our current orange oil problems in the short-term That said there is more optimism for the 2017 season with Peiró Camaró of Alejandro Peiró quoted in Fresh Plaza as saying "Valencia's citrus sector expects a normal production this campaign, recovering the volumes that were lost last year (over 30%) due to the impact of heat waves, frost and hailstorms." "Given the good flowering of the first mandarin and clementine varieties, we expect a good, quality production within schedule,"

Let's hope so!

Euro 7.50 /kilo



GRAPEFRUIT OIL Q USA

Citrus paradisi

"2015/16 white grapefruits down 34% and red grapefruits down 40% on 2014/15" says USDA

The season is now over and it's officially the worse season on record since the 1931/32

The final forecast by the USDA for the grapefruit crop now stands at 10.85 million boxes (2.5 million boxes of white grapefruit and 8.35 million boxes of the red variety) down 15.9 percent from the 2014-2015 season and off 40.9 percent from the 2012-2013 season, when 18.35 million boxes were filled.

As there is now no scope for the situation to get better we can only assume that the oil market will continue to tighten in the coming months with no fresh supplies expected until late in the year.

There is some irony in the fact that global fresh grapefruit production is thought to be up 300,000 MT given the large increase in cultivated areas in China. However, these are primarily for the growing fresh fruit markets. Hard to believe given the problems in the oil markes but maybe a longer-term opportunity here for the Chinese?

Pink USD 46.00 /kilo+ White USD 60.00 /kilo+

LEMON OIL Q USA

Citrus limon (L.) Burm. F.

We're now off-season and there are very few fresh offers from origin. This year's fruit harvest was similar to that of last year.

As with many countries, the United States is now importing more lemons than ever before, including recently from Argentina, something many local producers are challenging but with a growing domestic fruit market and a relatively static local production this is a trend that is likely to continue.

The latest USDA figures for the 2015 – 2016 season shows the California lemon forecast to be 42.0 million boxes, up 2 percent from last season's final production. In California the desert harvest is now complete.

■ USD 38.00 /kilo

Florida's citrus is a huge \$10.7 billion industry. Covering

500,000 acres of planted citrus it is estimated to support

Having suffered in recent years from HLB (Citrus Greening),

around 62,000 people making a living from this sector.

canker and other diseases there is a huge concern over

ORANGE OIL @ USA

Citrus sinensis

"2015/16 fruits down av. 26% on 2014/15" says USDA

You need to dig through the statistics to find something positive here as the season ends and the impact of citrus greening takes its toll.

"Today's final citrus crop forecast is yet another reminder of how far our state's signature crop has fallen," Florida Agriculture Commissioner Adam Putnam said in a statement. "Production is nearly 70 percent lower than it was 20 years ago, and the long-term future of Florida citrus depends on a breakthrough in the search for a long-term solution to greening." The State has pledged an \$8 million budget to help fight citrus greening and \$14.7 million for a citrus health response program within the Department of Agriculture & Consumer Services.

To quantify this the total orange harvest is the lowest since 1963/64 season and for the Valencia type the lowest since the big freeze of 1989/90.

The net effect of these figures can be felt in the oil markets, compounded by the ongoing global supply issues mainly originating from Brazil.

The oil markets are hurting but the Florida citrus markets are hurting more with the future looking rather worrying. The first official forecasts for the 2016/17 season will be available mid-October but one producer has suggested to us that "Florida orange growers will produce 60.5 million boxes of oranges in the new season. If accurate, that would be a 26 percent decline year-over-year, and the smallest state orange crop in 53 years."





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