

MARKET



Intelligence

MAY 2018



CITRUS OILS - ESSENTIAL OILS - CHEMICALS - HIC

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WELCOME



The search for stability in an industry that is almost defined by its challenges and volatility remains elusive as we move further into the year.

With demand for citrus remaining strong, but a credible picture of some global inventories yet to materialise, the markets remain active. Dramatic fluctuations in supply, demand and pricing are raising questions that even those in the know may struggle to rationalise as drivers remain unclear.

Fierce competition from fresh fruit markets worldwide continues to put a lot of price pressure on processors and that, coupled with dramatic swings in demand, reminds us how quickly markets can turn.

Turning to essential oils and chemicals, unseasonal weather patterns and shortages caused by a lack of planting or raw material supply are making waves.

When faced with apparent inexplicable market movements, it is essential for buyers in this space to work in partnership with their suppliers to ensure they have access to reliable market intelligence from a reputable source. We proudly collaborate with all those across our supply chain, sharing information as we have it so that decisions can be made that will mitigate customer risk and drive business growth.



CITRUS

Oils

ORANGE

Brazil

The volatile markets we operate in continued to be challenging as we moved from quarter one into quarter two of 2018. The crop has now well surpassed the projected 364 million box (mbx) count with Fundecitrus' April 2018 update revealing a total count of 398 mbx, a 62.5% increase from the dismal 2016/17 season. Processing of Brazil's bumper crop ran well into February and some plants were still processing oranges even into March, although the last couple of months have seen larger fruit of poorer quality coming through in line with the usual bell-shaped curve. In an effort to standardise the cold pressed orange oil (CPOO), some processors held back higher aldehyde material from peak months to blend with lower aldehyde oil towards the latter period of the crop, but overall quality for the year was average to good. With demand for oil remaining strong and no clearer picture of global inventories, the market has remained active but recently shown signs of some easing.

Tracking CPOO prices in the normal fashion was d-Limonene and orange terpenes in most global markets. This was the situation well into March when, in North America, volumes appeared at lower prices than generally anticipated. Over the years we have seen dramatic unexplained fluctuations in both supply and prices which occur rather suddenly. We have recently seen this in the d-limonene market in North America; the question is will the low demand and therefore fall in prices continue? Is this the time where we begin to see the full impact of large scale industrial reformulations to remove limonene and replace it with palm and pine derivatives? Additional to this, a number of F&F customers are holding off in anticipation of a cheaper tomorrow. This is adding further pressure to a market that is already showing signs of stress. If the limonene market continues to fall, we need to consider the influence and impact this could cause on the CPOO and folded derivatives markets.

All eyes are now on the 2018/19 season in Brazil and though we still must wait until next month for specifics, the crop is projected to be in the 300 mbx range, which would mean a 25% reduction on last season. As we try to wade through the orange co-product markets, which have been extremely volatile for almost a decade, we should consider multiple years of production and processing in terms of supply. It appears we may be beginning to level out some, certainly that is the hope of buyers and sellers alike as the turbidity in these markets has been extensive.

Florida

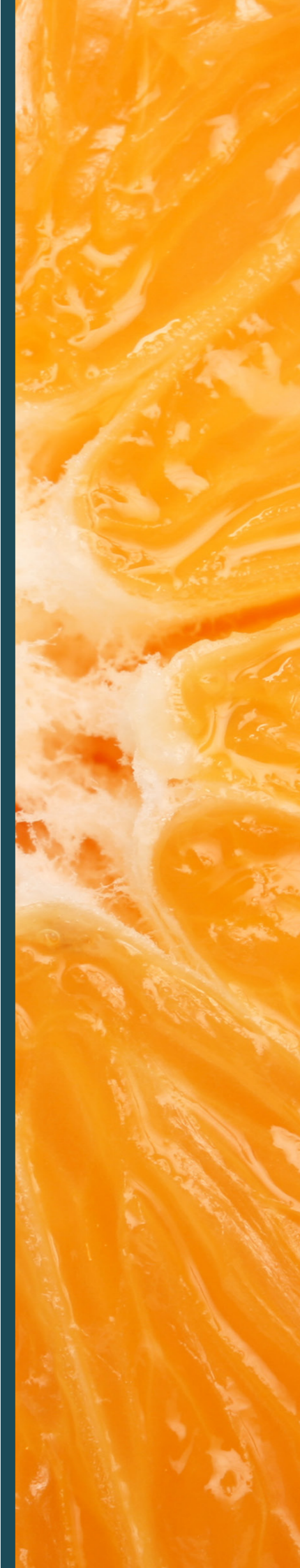
Although Florida growers continue to contest the actual impact of losses incurred from Irma has been understated, the latest USDA report suggests the expected crop is unchanged at 45 mbx, confirming the poorest crop in 70 years. The devastation caused by Irma will no doubt prove a major challenge for Floridian growers to even recover to their position pre-hurricane, though the US government has signed off \$2.3 billion in disaster recovery aid to support the re-growth of the state's citrus industry.

With farmers still waiting to receive recovery aid, some growers, whose families have grown citrus for generations, may have no choice but to withdraw from citrus altogether after being pushed to the brink of financial breaking point. Many will be taking a new direction, considering more robust crops such as sugar beet, blueberries or hops in the future.

HLB/greening/yellow shoot disease continues to plague the industry, particularly in Florida, and although there are some promising root stalks being researched, it seems a solution just cannot come quick enough for these growers. It has been a long uphill battle but on the positive side, there are many who are dedicated to bringing citrus back to the heart of Florida and we are looking forward to watching that happen.

Mexico

Mexico's current crop, which was reduced by hurricanes Franklin and Katia, has provided good quality oil and processors have seen consistent demand for both oil and juice. Prices for CPOO were initially very firm but have eased following Brazil, and are expected to remain relatively stable at least until clarity of this seasons Brazilian crop is received. Early indications are visible that the 2018/19 crop will be healthy having enjoyed a positive blooming season (February-March) with an adequate amount of rain and no excessive winds which will hopefully enable more flowers, then fruit, to remain on the trees until harvest period later in the year.



LEMON

Argentina

Many buyers who have experienced how aggressively the lemon oil market can fluctuate took early cover in 2017 after learning of a smaller crop, high fruit prices and inconsistent weather. However, as we rolled into 2018 surplus volumes appeared in the market, softening prices as we expected. The 2018 crop indications remain positive although it's thought to be around 1.2 million metric tons (mt's) as opposed to the 1.4 million mt's projected in the third quarter of 2017.

We have started to see very early oil from 2018, although it will be well into June before the tap is really turned on as the processing pace picks up. We are reminded that 80% of Argentina's fruit goes for processing, however exports into America will begin this year which will be a new factor to consider, potentially adding a little more pressure on fruit prices. As the leading producer of lemon oil we expect this crop will be the one to settle the global market in months to come, but we will still see the usual \$3-6/kg deviations in price for sub-standard quality.

Italy/Sicily

Although this season's crop was of a standard size (580,000 mt's) and quality, the biggest challenge remained the high cost of fruit driven by fierce competition from the fresh fruit market. Prices for lemons soared to highs of €460/mt, which left some processors with two choices: bear the high cost, which would inevitably distress profits, or target opportunities to secure parcels of fruit at cheaper prices and process as those chances became available. Either way, the rising price of fruit has driven oil above \$40/kg with no initial sign of this easing, certainly not until Argentina comes fully on line.

Spain

The year's crop was consistent with the last at around 1.1 million mt's. However, like their Italian counterparts, Spanish processors have had to fight to secure fruit at high prices against those buying for the fresh market. In complete contrast to Argentina, 80% of lemons from this origin are destined for this purpose, which means simply securing industrial fruit is a continuous challenge for processors. For this reason, the clear majority of fruit is initially put through packing houses and sprayed. Any fruit found unsuitable for sale at this stage is then re-directed to industry, and it is these pesticides that subsequently affect the quality of oil, causing further problems. To alleviate these challenges, some processors have bought and are

planting their own groves, a huge investment but one they see as critical to mitigating price hikes and controlling the required input qualities. In the mid to longer-term, initiatives between processors and growers to exclusively direct fresh fruit from one to the other is underway. Currently, though, oil prices remain firm and in line with those of Italian oil.

US

Interestingly the percentage of processing lemons from the major growing region, California, going to NFC production is increasing. Like the rest of the world however, the fresh fruit market remains king. Processors are only expecting to run about 80% of the volumes they did last year, a result of worldwide high fresh fruit demand drawing fruit away from that industry. California oil usually commands a 10-15% premium as the region is in very high demand as much for provenance claims as quality.

Mexico

The total production at this origin remains quite vague. The major producing region, the state of Tamaulipas, is logistically difficult for travel but total oil production in Mexico has been steadily increasing for most of the last decade. As fresh fruit prices continue to go up though, processors are struggling to continue to pay for the fruit to run through the plant.

DISTILLED LIME

The dynamics of the pectin market continue to have a direct impact on key lime processing in both Mexico and Peru. Approximately 80% of global pectin demand is in the hands of a very small number of major consumers, and as that demand is currently quite low, prices have come well down and both buyers' and processors' inventories have risen. This, coupled with relatively slow demand for both oil and juice, have caused some processors to reduce their projected volumes for the 2018 season.

Although pectin from lemons and limes is still in demand and necessary for specific applications, much of the need has switched over to less expensive orange pectin, leaving lemon and lime dryers operating very slowly if at all. The total volume of fruit harvested in 2017 was 35-40% lower than 2016, particularly in Michoacán due to the heavy infestation of Thrips, the pest that eats both the leaves and fruit. We have seen a continuation of that

decline this year, noting the volumes harvested in the first quarter of 2018 were 40% lower than this time last year. This is particularly concerning when 30-45% of Mexico's key limes goes to processing compared to a maximum of 30% in Peru.

Mexico's current industrial (for processing) fruit price of approximately \$85/mt is down from \$170/mt in January, which is much more reasonable for processors, particularly in the current market conditions, but if prices drop much below this level it becomes unsustainable for the growers. The next 45 days will prove a busy time for processing as the supply chain tightens under pressure. The El Niño weather pattern has been blamed for a reduction in this year's Peruvian crop which has resulted in only around 360 mt's of distilled lime oil, close to 40% lower than an average year. However, Peruvian processors continue to benefit from much lower industrial fruit costs whilst their offers of oil, juice and pectin all remain in line with Mexico.

This is a market where prices have remained stable over the last 12 plus months, but we believe there is a pinch point pending. Will growers withdraw due to low fruit prices? Will all processors run fruit this year? Will the reduction in pectin prices force increases in the prices of oil and juice? When will the market start to feel the significance of the greatly reduced worldwide supply of oil over the last two years? We need to remember that the global number of distilled lime oil producers can be counted on two hands, and when this market goes – it goes. We will continue to keep our eyes on this one very carefully.

GRAPEFRUIT

Processing came and went in the blink of an eye in Florida, finishing before it used to even begin when grapefruit was plentiful. As if it needed any more bad news, recent USDA crop forecasts from late 2017 indicated that the crop of 4.65 mbx would indeed come to fruition, and growers and processors would be able to capture value from every piece of fruit. However, the latest release in early April

revised this down now to around only 4 mbx, a 14% reduction month on month.

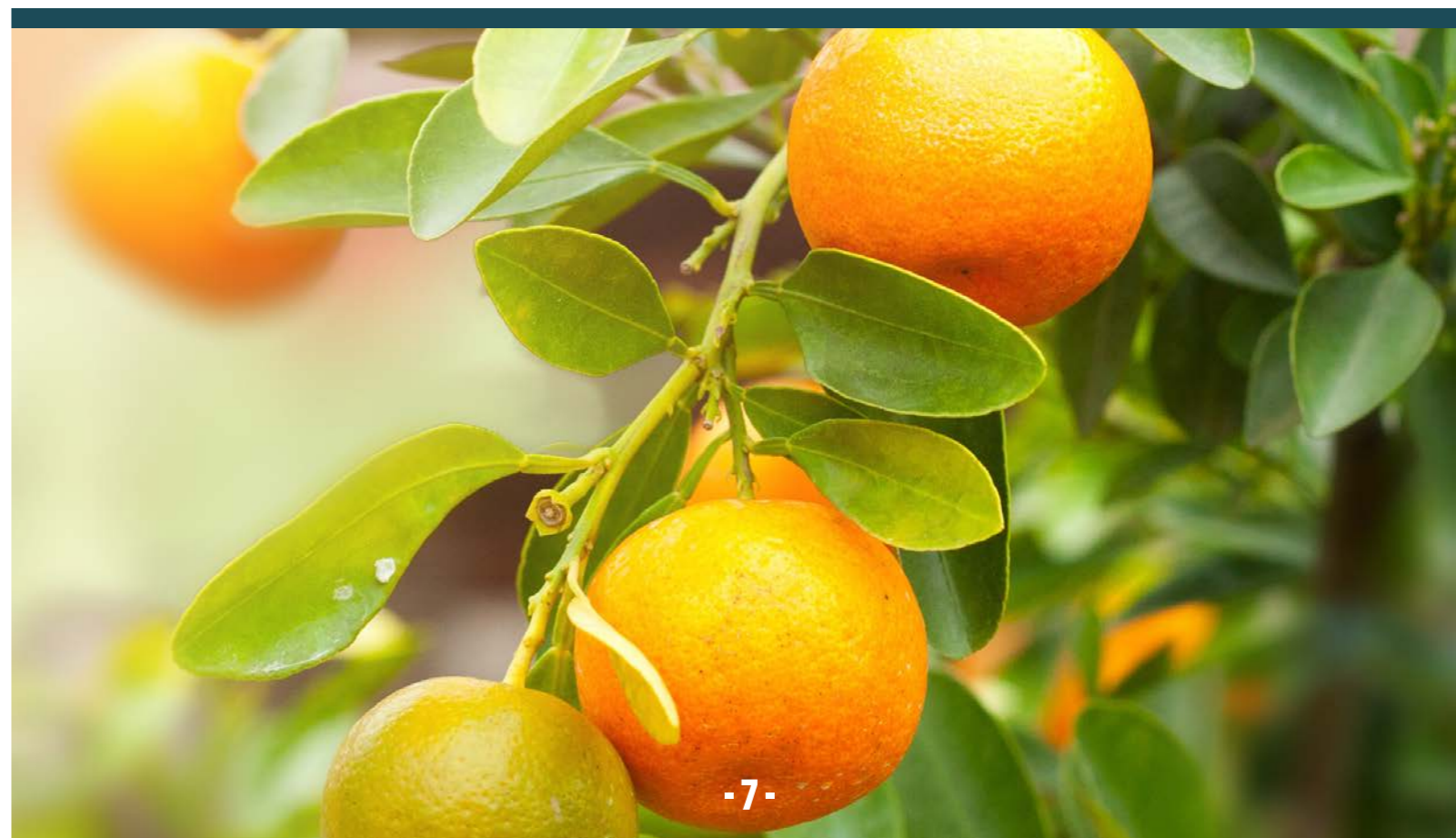
To say that grapefruit essence oil is becoming scarce in availability is a vast understatement. Sources close to us and very close to industry statistics put production worldwide at or less than a full container (80 drums) per year.

We have seen a staggering rise in the price for grapefruit oil over the last 18-24 months but finally there may be a plateau. However, demand appears to be as strong as ever with grapefruit being an apparent trending flavour. There is often a 'mismatch' between what customers, therefore flavourists and marketers, want in terms of new beverages and what the market can provide. This is certainly the case today where we hear of and see more briefs requesting grapefruit flavours than at any other time.

In the face of a challenging market, Treatt has a range of price-stable grapefruit solutions that allow formulators to explore how this trending ingredient can be incorporated without the trials of dwindling supply.

TANGERINE

As demand and markets continue to grow for lemon, grapefruit and orange, varieties of *Citrus reticulata*, commonly collectively known as tangerine, are bucking this trend. These fruits, referred to as "easy peels" have become progressively more popular for the fresh fruit market worldwide, as a result we have seen an increase in planting and production over the last decade. More total fruit production has also provided processors with an opportunity to process more of these fruits which gives our industry access to more oil. Most tangerine oils are a deep to reddish orange in colour, with flavours from honey sweet (Clementine), sweet and juicy (Murcott) to the rich flavours of a true Dancy tangerine oil. As a result, amongst the heavy volatility of other citrus oils, tangerine oils have enjoyed some semblance of stability. Please speak to your sales representative or our customer service team for samples and suggestions.





ESSENTIAL

Oils

CARDAMOM (GUATEMALAN)



The 2017/18 harvest is drawing to a close and, although the official statistics are not yet available, the results are not looking favourable. Heavy rains at the end of last year made accessing the crop for harvest difficult. This coupled with an extremely cold snap, which stunted growth and the maturation process of the seeds, has resulted in poor quality, high value seeds which is creating oil with the same characteristics.

TEA TREE (AUSTRALIAN)



In recent years much of this oil has been placed under contractual agreement which has had a great influence on the stability of the product – both in price and availability. Plantations are increasing year on year to supply the continuing growth in demand for this versatile oil. The harvest typically starts in July and although there is still oil available on the spot markets, we understand that there is little to no oil left at origin. As this has been the case for around three months or so, some processors are looking to start harvesting earlier than usual as contractual agreements need to be fulfilled. Despite the situation, yields this season are expected to be similar to previous, however as the earliest oil produced is pre-committed, delays in supply to the spot market are likely.

EUCALYPTUS (CHINESE)



We have seen the oil prices peak at very close to three times what we were paying at the same time last year. There is a concern at origin that new trees are not being planted to replace those that have died off and recovery time and regrowth rates of the remaining plantations is simply not enough to provide for all market demands. The Government is encouraging the planting of cash crops such as tobacco and rice rather than replanting those for essential oils, which is only adding to the problem. This is likely to cause the ongoing shortage of oil to continue with worsening effects to derivative products going forwards. It is unlikely that we will ever any price relief in the short to medium term and certainly not back to levels of even 12 months ago.

STAR ANISE (CHINESE)



Anise trees are not very hardy against cold conditions at the best

of times, so the heavy snow and frosts experienced in January in the main production area of Guangxi has killed many trees. In addition, during February much of the fruit and buds on the remaining trees were removed by major hail storms. The resulting harvest will be nowhere near large enough to cope with demand for the oil and derivative products such as Anethole. Supply of these materials is already limited with prices rising inexorably.

BUCHU (SOUTH AFRICAN)



Approximately 10 years ago, an abundance of buchu leaf resulted in a price crash meaning farmers received much lower prices for their crop. In the intervening years prices of other crops, especially rooibos tea, which grows in the same area, led to farmers removing whole buchu plantations in search of higher incomes whilst demand has steadily increased. This has caused prices to rise accordingly.

Adding to the existing challenges, the remaining growing area has experienced extreme drought and even wild fires in the last two years. This has severely impacted not only on the acreage under plantation, but the yields of leaf being produced by the remaining plantations. To try to remedy the situation, in the hope of achieving sustainable volumes going forward, users and processors are committing to working with their key farmer/suppliers.

The aim is to increase plantations (as far as water supplies will allow) with incentives of longer term agreements at higher prices being the mechanism of choice. All of this is reflected in the current limited availability and steep price of the essential oil. It remains to be seen what the impact of such agreements will be in the future but, given the time for new plants to grow, we are hopeful that prices should remain steady and availability improve in the short to medium term. Longer term, with more favourable growing conditions on our side, this should improve further still.

GINGER (CHINESE)



Ginger roots, which were buried or stored in underground cellars after the September/October harvest for planting in the spring, have been found to be unfit for planting as they have been saturated by the melting of heavy snowfall from earlier this year. The impact for the oil market is double edged – although the saturated roots are unfit for planting, they are suitable for oil production. This will help availability and will hopefully provide some softening in price soon. However, this won't last as the reduction in roots planted now affects the volumes realised for harvesting later in the year.



CHEMICAL *Ingredients*

NATURAL CHEMICALS

FATTY ACIDS

Crude palm kernel oil prices are stable despite increases in demand, particularly from the far east, due to environmental controls. This has impacted lead times and availability, however we have started to see some softening in pricing. We will continue to monitor this feedstock market, assessing its impact on the fatty acid and alcohol derivatives that it supplies.

TURPENTINE

Raw material prices remain very volatile since our last update. The market has seen increases in the last few weeks after pricing had remained stable in February. This is in stark contrast to November where we saw prices moving up on a weekly basis. The combination of an aging population of trees yielding less, with fewer factories due to the ongoing clamp down for environmental issues in China, has resulted in a reduced supply. This is then out of balance with demand which continues to grow year on year. The situation has also been made worse following a recent fire at a large chemical manufacturer in India which produces Turpentine derivatives. Terpinyl Acetate is one of the products that has been worse affected, but this is one of many that our industry uses in substantial volumes. There is hope that this summer's crop will be good and we remain optimistic as we look forward but the months in between do look to remain unsettled.



SYNTHETIC CHEMICALS

PETROCHEMICALS

Continuing the theme of the changing world of key feedstocks impacting the cost of staples of the F&F and allied industries, it is important to note the continued rise in the cost of crude oil. It is the slow and steady rise in cost that has kept crude from the headlines but the price is now firmly back in the high \$60s/barrel and threatening to move into the \$70s/barrel, prices not seen since late 2015. We are ever hopeful, but still searching, for a market condition moving in our favour.

TERPINEOL

With severe restrictions on availability of Acid Anhydride, the supply position for Terpeneol derivatives remains extremely difficult. This situation is not expected to improve in the near future and, as such, pricing will remain firm.

CITRAL DERIVATIVES (UPDATE)

As reported in our previous market intelligence, the large European Chemical Manufacturer BASF had a fire last year which has affected the supply of Citral and all derivatives. We now know that the extensive repair work was completed on time at the end of March which is good news for the vast majority of the F&F and allied industries using these materials as staples. BASF is now in the process of restarting production with new batches of Citral expected to be ready in the near future, with downstream products to follow. Although this is good news, there is an incredibly large pipeline to fill and, as such, we do not expect buyers to feel the full effects for at least the next three to six months.

DIPHENYL OXIDE

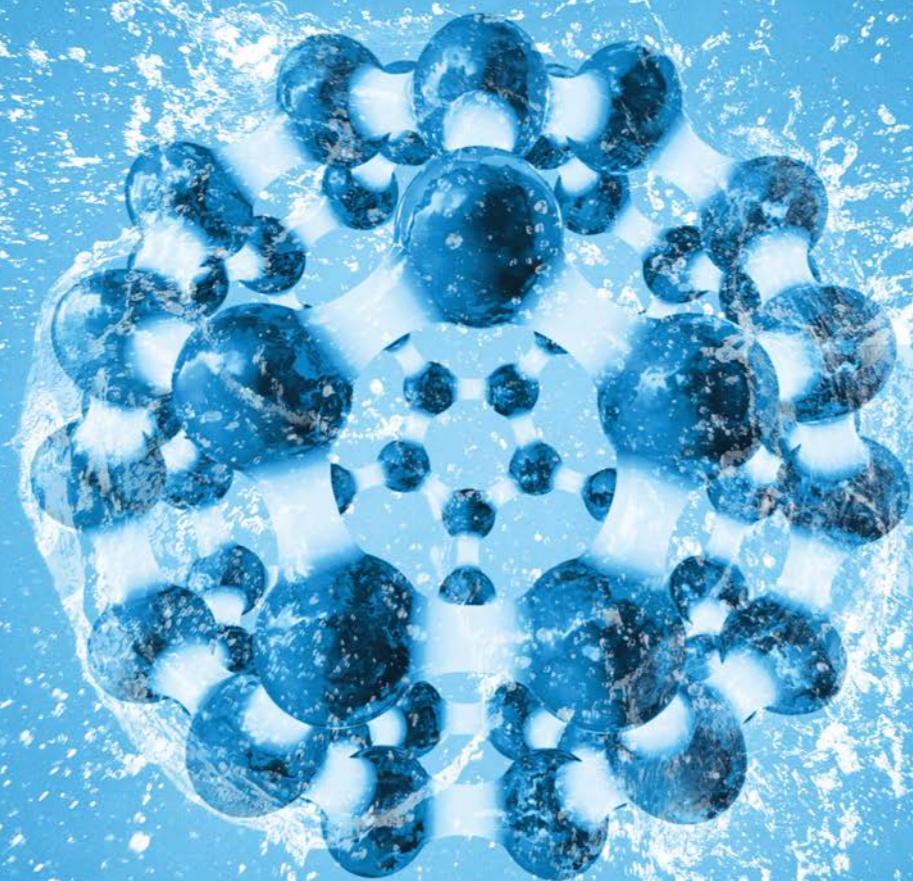
One of the major manufacturers of DPO is transitioning to a new site in Northern Central China. There will be a gap in production while the existing facility is shut down and the new one is commissioned. It is expected that the new site will be fully operational by October this year. The gap being created as the old site was shut as part of the ongoing environmental protection inspections/closures. Furthermore, with changes to anti-dumping taxes the price for Phenol, a key raw material, is also increasing.

ETHYL BUTYRATE

Butyric Acid is another material suffering due to shortages of key raw materials. The problem was created by factory closures due to environmental protection orders but is being maintained by others shutting for planned maintenance. The knock-on effect is as you would expect, reduced availability and higher pricing, a very common theme for many materials currently.

METHYLCYCLOPENTENOLONE

Methylcyclopentenolone is the latest product to be affected by the ongoing restrictions being applied by the Chinese Government to curb pollution. To ensure their production facilities meet these strict requirements, two of the larger manufacturers of this material have had to invest heavily, and reduce their production capacity by over half, the impact of which has seen prices in the market increase rapidly.

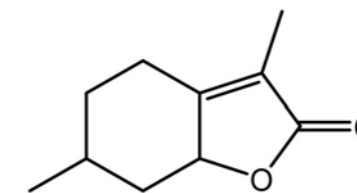


CHAMELEON COMPOUNDS

HICs are excellent enablers of the artistic nature of flavourists, providing the desired nuances that complete the most authentic and true to nature creations. These molecules can change in character depending on a multitude of factors, from inclusion rate to the surrounding flavour base, meaning one compound can serve a variety of applications.

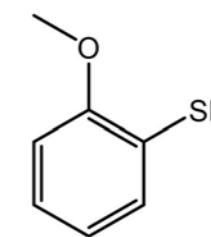
MINT LACTONE 1% TEC (FEMA 3764) CAS 3341-72-5

A remarkable molecule, it adds a refined coconut note to fruit beverages at 0.5-1ppm whereas its coumaric, minty character is prevalent at 0.1ppm and lower – excellent for smoothing mentha piperita and arvensis blends. Nature identical in peppermint.



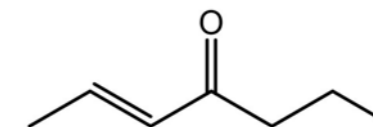
ORTHO-THIOGUAIACOL (FEMA 4159) CAS 7217-59-6

Imparts a garlicky, meat note to formulations at 1ppm but a smoky, earthiness at 0.1ppm which is ideal for coffee, not surprising as it can be found in coffee.



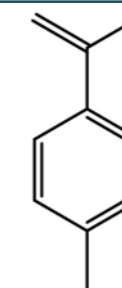
2-OCTEN-4-ONE (FEMA 3603) CAS 4643-27-0

Nature identical in strawberry, at levels of 0.5-1ppm it truly shines for strawberry, dried apricot and mango top notes. Lower concentrations of 10-50ppb provide a freshness to chicken flavours.



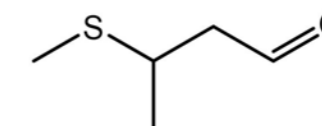
PARA-a-DIMETHYLSTYRENE (FEMA 3603) CAS 1195-32-0

Concentrations of 10-100ppb add authenticity to habanero preparations whereas higher levels of 1-2ppm provide a balanced, roasted character to coffee flavours. Nature identical in Juniper and Eucalyptus.



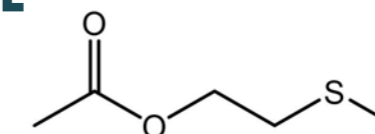
3-METHYLTHIOBUTANAL 10% IN TEC (FEMA 3374) CAS 16630-52-7

A molecule not dependent on inclusion level, this instead adds tomato, vegetative and fishy character at 0.1-0.5ppm depending on the flavour base employed. Nature identical in brussel sprouts.



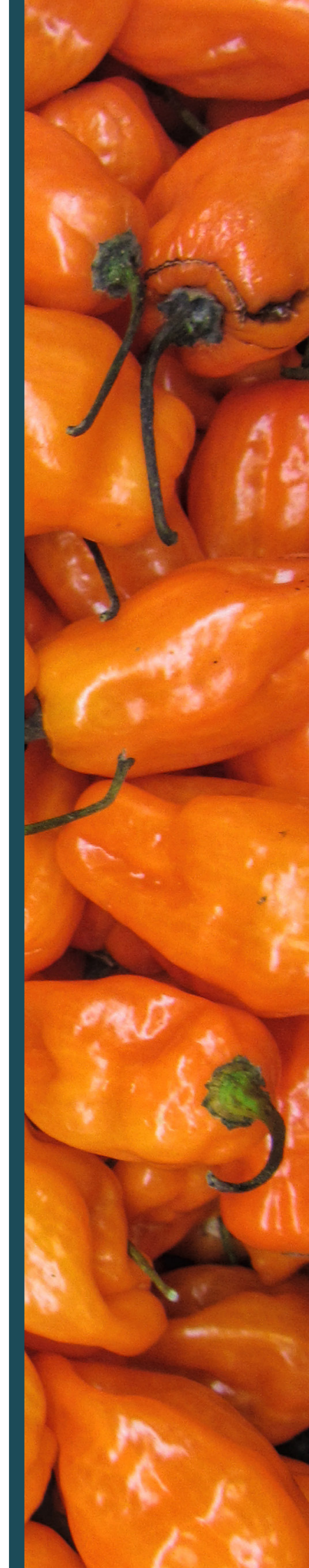
2-(METHYLTHIO)ETHYL ACETATE (FEMA 4560) CAS 5862-47-5

A truly dynamic molecule: inclusion at 50-100ppb provides a pungent, horseradish nuance to meat products, higher levels of 1-2 ppm enhance tropical and melon flavours.



HIGH IMPACT

Chemicals





TREATT

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