MY FAVOURITE: DAVIDA

EDUCATION ROUNDPUP

ESSENTIAL OILS VERSUS CORONAVIRUS

VANILLA, A TRADITIONAL FLAVOUR BUILT FOR THE FUTURE

THIRD TOPICAL ROUNDTABLE: CITRUS
I want to reassure you that our Committees, staff team and contractors are doing everything we can to develop and enhance our Membership services over the coming months.

It is unfortunate that we had to postpone both of our annual physical events – the Study Tour of India and the Berlin Conference - but as you know, we had no choice. It was vital that we did so in order to ensure the safety of our delegates, staff and partners alike. Taking such decisions, which a short while ago would have seemed unthinkable, was indeed difficult. However, we are currently putting plans in place to move some aspects of the Conference online. Further updates about these plans will follow in due course.

Sadly, our global Membership finds itself in uncharted waters; we are living in unprecedented times. Now is the time to pull together and support one another, and our beloved Federation. Please make use of our Internet Chatroom (available on our website for logged in members) to continue to network and do business with other Members. You can also video and voice call other Members in the Chatroom.

The COVID-19 situation is fast changing and fluid. It is likely, therefore, that our plans will develop as the situation evolves over the coming weeks and months. We will keep you informed throughout and we will continue to support our Members during and beyond this uncertain period.

Stay safe and well – we will get through this together!

Yours sincerely,

Mr Hussein A. Fakhry
IFEAT Executive Committee Chairman
NEW IFEAT COMMITTEE CHAIRS

A number of IFEAT Committees have recently appointed new Chairs. Dominique Roques is now Chair of the Communications Committee and Aslan Gülçiçek is Chair of the Membership Committee. Each takes over from the previous Chair of the two Committees. Jalal Charaf, Csaba Fodor takes over from Michael Torre as Chair of the Education Committee whilst one of the newest members of the Executive Committee, John Nechupadom, takes up the reins of the Study Tour Sub-Committee from Stephen Pisano, Vice Chairman of the IFEAT Executive Committee. Csaba and John were voted in during the May IFEAT Executive Committee meetings which this year, for the first time, were held online due to world travel restrictions.

Executive Committee members are invariably very successful business people in their own right, often owners and CEOs/Presidents of their companies or hold positions of importance in the companies by whom they are employed. Each committee member devotes a substantial number of days each year (pro bono) to IFEAT activities.

To see who is a member of each IFEAT Committee, please visit: https://ifeat.org/project/our-committees

WHAT DOES IFEAT MEMBERSHIP INCLUDE?

An annual membership subscription to IFEAT has numerous benefits, even in the absence of our annual Conference, including:

- Access to the online IFEAT Members’ Directory
- Recognition within the F&F industry as an IFEAT Member
- Voting rights at the AGM
- Access to the Members’ only Internet Chatroom
- Use of the IFEAT Conciliation Service
- The ability to read and download past Conference Proceedings free of charge
- Receiving IFEATWORLD newsletters quarterly
- Access to member resources – links to useful regulatory details and industry information
- Discounts on IFEAT flavourist and perfumery diploma courses
- Networking opportunities

Of course when Conferences and Study Tours are taking place there are the additional benefits of priority online booking for the annual Conference, reduced Conference registration fees and the ability to participate in IFEAT organised Study Tours.

As you know, due to the COVID-19 pandemic situation, both our 2020 Study Tour and the Annual Conference have been postponed for the safety of our delegates; however membership is not linked to event attendance and therefore the subscription fee needs to be paid as usual. All other membership benefits are still available, which now include a new Chatroom for Members only that is available once you are logged in to the IFEAT website. You can make conference video or audio calls in the Chatroom with other Members, network with them and join in with a whole range of industry discussions!

Additionally all Members still have access to information and connectivity to other members, plus they are supporting the industry by being one of our Members and they have the privilege to declare themselves as an IFEAT member and therefore gain recognition within the industry.

IFEAT is continuously working to support many activities within the industry for its Members, and the membership fee covers all of these activities that will continue throughout 2020. Please refer to the Education & Industry Support information page on our website: https://ifeat.org/education

We would like to thank you for your continued support!
Seeds are sown in a nursery which is unique and fairly straightforward. The cultivation process of davana growing belt, about 50 kilometers from Bangalore. Hence, after much deliberation and planning, Plant Lipids established a distillation unit at the southern end of the Deccan region, this was the perfect time to cultivate davana. The short crop duration, comparatively lower labour requirements and cursory maintenance made it the ideal short crop. The cessation of rain during this period was also conducive to the crop’s growth cycle.

My initial introduction to the davana farming community and its cultivation goes back several years. In the late 1990s, I used to travel with my father to the hinterlands of Bangalore during the winter. The early mornings were particularly chilly in those areas. However, I can personally attest that for many small farmers at the southern end of the Deccan region, this was the perfect time to cultivate davana. The short crop duration, comparatively lower labour requirements and cursory maintenance made it the ideal short crop. The cessation of rain during this period was also conducive to the crop’s growth cycle.

Back then, we had been closely observing the davana oil industry and exploring the opportunities and challenges. In fact, by the beginning of the new century, the prices had gone up so much that it was a threat to its own sustainability. Keeping in mind the increasing consumer demand we wanted to ensure that we started off effectively on the right note in our quest to organise the supply chain. Hence, after much deliberation and planning, Plant Lipids established a distillation unit at the southern end of the davana growing belt, about 50 kilometres from Bangalore.

CULTIVATION AND PROCESSING

The cultivation process of davana is unique and fairly straightforward. Seeds are sown in a nursery which is then maintained intensively for about a month after which the seedlings are ready for transplanting into the main field. Primarily cultivated for its fragrant leaves and flowers, the short crop is normally planted towards the end of September after the south west monsoon recedes and winter is about to set in. However, depending on when the rains recede, the exact time of planting is best decided by the farmer. This is due to the fact that incessant rains can be disastrous for the standing crop due to its shallow roots. In the event of heavy rain, the field is often replanted to ensure maximum survival of the seedlings. One of the oil’s major components that gives it a number of beneficial properties is davanone. Traditional farmers used to harvest the plant as soon as bees and insects hovered over the flowers. This was a sign that the plant was mature and ready for harvest. The plant grows to around 45cm and is cut approximately 15cm from the ground. Traditional farmers still use this method today. To ensure davanone content is at its highest level it is essential to harvest, dry and process the crop right before the flower buds gape.

Davana oil is obtained by steam distillation of the dried herb. Generally, this is done in micro-distillation units scattered across the growing belt. These can accommodate large traffic of the harvested crop that matures and is ready to be processed. In most cases such units are not viable for the majority of independent and marginal farmers due to the limited usage for other crops or inactivity during off-seasons. We became increasingly involved in the supply chain and have been supporting the community with the required technology and infrastructure.

RISE IN POPULARITY ACROSS THE GLOBE

Until the end of the 1990s davana oil lagged behind in commercial value on the international scene and was generally associated with traditional Indian culture. Due to its unique fruity aroma, the demand for davana oil picked up pace when the fine perfumery industry started using it in multiple applications. Fine fragrance creators also laud the ability of the oil to impart on the wearer an experience unique to their own olfactory profile. This particular property makes davana oil a highly valued ingredient in the high-end perfumery and cosmetic markets. The oil also has extensive use in aromatherapy due to its reputation as a good aphrodisiac and as an active remedy to combat anxiety.

THE SCIENCE BEHIND THE ESSENTIAL OIL

Davana oil comprises davanone, a major sesquiterpene ketone and other essential components such as linalool, dehydro-a-linalool, isosdavanone, nordavanone, davanafurans, methyl cinnamate, ethyl cinnamate, bicyclogermacrene, davana ether, 2-hydroxysdavanone, and farnesol. These constituents contribute to its unique aroma, suitability for pharmacological application and for use as an ingredient in the fragrance industry.

The essential oil yield is higher at the stage of full emergence of the flower heads than at anthesis and initiation of the seed set stages. Based on laboratory tests, davanone and linalool decrease while other constituents increase from the flower heads’ emergence stage to the initiation of the seed set stage. Therefore it is ideal to harvest the crop just before the full bloom stage.

GLOBAL TRADE

According to verified estimates the global demand for davana oil is approximately six to seven tonnes per annum. One of the primary challenges to fulfil this requirement is the crop’s incredibly low yield. This means that a large growing area is needed to meet demand. Organising such a large crop that is entirely dependent on the farmer’s decision to grow it is in itself a daunting task. At present, the majority of the farming happens in southern Karnataka and adjoining districts of Tamil Nadu. Most of the essential oil manufacturing happens in Karnataka whereas in Tamil Nadu the farmers also market the crop for alternate uses such as the flowers being used for garland manufacturing or as a top dressing for Diwali sweets.

Davana oil invokes a complex floral warmth which reminds me of Christmas.
Fine fragrance creators also laud the ability of the oil to impart on the wearer an experience unique to their own odour.

There are many challenges when it comes to organising the davana supply chain. The lack of multiple major players is one and our decision to commission an exclusive manufacturing facility for this material has proven to be a very successful one too. We have been able to standardise the quality of the final product which has improved trust and credibility both in the backend supply chain and amongst the customers. We decided to facilitate the smooth supply chain by partnering with organisations engaged in improving the livelihood of the davana farmers. Some of the bigger players have been instrumental in devising standard operating practices that augment the traditional farming methods. This has led to a stability in farm income for farmers who have been associated with this crop over the years. We hope to go a long way in attracting more farmers to be involved with davana and to work with organisations to improve the livelihoods of families dependent on this crop.

Davana essential oil is a very important and indispensable component of a perfumer’s palette. Therefore it goes without saying that the application is very niche and that the volumes follow a predictable demand catered for exclusively by the farmers from South Karnataka and its neighbourhood. We have observed that the annual demand for the essential oil is between six to seven tonnes per year. However, more often than not, the prices are determined by the supply side. The available statistics indicate an erratic production number for the essential oil year-on-year depending on carry-over stocks and general farmer sentiment. The fact that the crop is of short duration and that the farmer has a choice of alternative crops like maize or cotton further complicates the decision process. The following illustration tries to capture the international price situation for the past few years. We expect the trend to continue in the years to come as long as there is a predictable stability in the application/demand for the essential oil.

It goes without saying that the popularity of davana oil is here to stay. For me personally, davana oil invokes a complex floral warmth which reminds me of Christmas - especially the warmth of a nice rum cake!

The exclusivity of the crop and its limited but niche applications will definitely prove beneficial for this wonderful crop and for the families associated with its cultivation. I wish them well and for their lives to be fresh and fruity - reminiscent of the oil.

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The exclusivity of the crop and its limited but niche applications will definitely prove beneficial for this wonderful crop and for the families associated with its cultivation. I wish them well and for their lives to be fresh and fruity - reminiscent of the oil.

Family traditions have carried us through to the fourth generation, maintaining the same passion and respect for our generous land that is Sicily.

www.agrumariacorleone.com
info@agrumariacorleone.com
ICATS - INTERNATIONAL CENTRE FOR AROMA TRADES STUDIES

The value of the ICATS/IFEAT Diploma distance learning programme has proven resilient under the current turbulent conditions. Written by the industry for the industry, it has over 25 years' proven track record and has been able to continue to support global participants, even under lockdown conditions.

The ICATS Team extends congratulations to Marta Garcia Canton, this year’s ICATS/IFEAT Best Diploma Student. Marta is the second Flavour Pathway participant to achieve this distinction. Her research dissertation, 'Study of different essential oils of the genus Thymus’ illustrates the dynamic range of topics that have been selected over recent years, spanning aroma materials production to their application in flavour and fragrance products.

The industry faces immense pressure with increasing regulation (e.g. The IFRA 49th Amendment), environmental issues, economic pressures etc. All this is before the current crisis. Professional development through the ICATS/IFEAT Diploma Programme offers cost effective solutions to give staff the necessary skills to meet these challenges; no travel is necessary and practical work-based assignments can be completed around business commitments. This offers flexibility which is not possible with fixed examinations or residential courses.

The ICATS team is proud of this wide international creation in some of the leading flavour companies. It is primarily designed for graduates working in the flavour or food industries seeking to upgrade their skills, and most participants are sponsored by their companies. The popularity of the course is helped significantly by the publicity provided by IFEAT at the annual Conference and through its publications.

The next course is being planned for May 2021, when it is hoped that most of the delegates who were prevented from attending in 2020 will participate. However, there should be a few places available for other delegates.

More information can be found at: www.reading.ac.uk/flavours/ shortcourses or from Prof Don Mottram at the University of Reading: d.s.mottram@reading.ac.uk

EDUCATION ROUNDUP

MARTA GARCIA CANTON ICATS Medal Winning Student

Please do keep in contact in these difficult times through the ICATS website www.icatsaromaeducation.com or email aroma@icatsaromaeducation.com.

IFEWORLD asked Marta to tell us more about her aspirations to work within the F&F industry.

"Since I was a teenager I wanted to work in the flavour and fragrance sector and that’s why I focused on studying chemistry. As the world of chemistry is so broad, I decided internship opportunities in the laboratories of several important companies in the pharmaceutical sector, to begin my internship at Lluch Essence. At the end of the internship, I decided to start the course through the fragrance pathway, but in 2015, I began working as a flavourist in EFF Spain, the flavour production centre within the EFF group, so I switched to the Flavour pathway. The course has complemented my knowledge and I have acquired knowledge in the different areas of the food industry including operations, logistics, and quality assurance. Thanks to this, I am able to put into practice everything I learned and I can relate my acquired knowledge to the demands of the clients, always seeking to offer them the best quality and service."

When asked how Marta felt to have completed the course and received the award she told IFEWORLD: "The Aroma Trades course has given me extensive knowledge of the sector and a solid foundation for creating flavours. In addition, it has given me the opportunity to learn with the support of great and expert professionals in the sector and I am very grateful and proud to receive this award from excellent professionals who have recognised my hard work."

Marta hopes to attend the postponed IFEAT Berlin Conference in 2020 to collect her medal.
AROMATHERAPY AND SCIENCE: ESSENTIAL OILS VERSUS CORONAVIRUS

BY DR. WLADYSLAW S. BRUD,
POLISH AROMATHERAPY ASSOCIATION

The world-spreading infection of Coronavirus SARS CoV-2, which has caused numerous cases of COVID-19 (coronavirus disease-2019), is analysed from an historical perspective of past plagues and is related to current research work on anti-viral and immunological properties of essential oils.

Plagues and pestilence on a global scale caused by microorganisms have been known since ancient times. The sixth of the so-called seven plagues of Egypt is associated by some scientists with the plague epidemic. The Black Death (hemorrhagic plague) and bubonic plague were caused by bacteria from which Yersinia pestis was reconstructed from mass excavations of cemeteries during the construction of the London Underground. It is not known whether and what microorganisms caused these epidemics; the largest of which decimated the population in the 13th century, the 17th century brought a similarly huge death rate. The plague returned on a smaller scale many times and the last cases were recorded in the 20th century - San Francisco 1904-1905, followed by several more cases in Madagascar, mainly in prisons (1935, 2012 and 2017). In the latter case, despite the use of antibiotics, 170 people died from an infected population of several thousand.

Here, however, there were already antibiotics.

It is interesting to see how the epidemic was fought in the past. Quarantines, masks, isolation of patients, and above all, various herbal preparations, including, of course, essential oils. In the royal archives of England in the 12th century, it was noted that a band of thieves robbed the sick who had died as a result of the plague without harming themselves. It turned out that it was a family of perfumers who protected themselves with a mixture of oils called “Four Thieves Vinegar” consisting of a solution of lavender and rosemary oils, nutmeg, sage and cinnamon in a vinegar suspension with the addition of garlic, or a macerate of a mixture of these herbs in vinegar. Some historians locate that story in France (Marseille). Other information from this period stated that the mixture can serve to protect against typhoid and cholera infections and that it contained both essential oils as incense, juniper, angelica, sage, eucalyptus, clove, thyme, lemon, camphor and rose.1-4

In the historical files of the village of Backley, it was noted that during the seventeenth century epidemic there were no victims, because its inhabitants dealt with the cultivation of lavender and the production of lavender oil. The area was surrounded by lavender plantations and many distilleries operated within it. So, you can be sure that the air around the area was saturated with the scent of lavender, whose antibacterial properties have been known for a long time. In addition, the mayor during the epidemic ordered the wearing of masks saturated with a solution of lavender oil and did not let newcomers into the town, creating a kind of quarantine.1-3

There are not many reliable sources that would confirm the use of essential oils in ancient Egypt and in the Middle Ages to combat this particular infection. However, starting from the oldest Ebersian documents, through Egyptian papyri (especially Ebers papyrus, which is in fact a kind of pharmacopoeia) through the Indian (Ayurveda), Chinese, bible oils for priests anointing hands, against infection and incense for disinfection of temples), scholarly books of ancient Greece and Rome (Hippocrates, Pliny and Plutarch), works of Avicenna (Arab alchemist and medic), until the Middle Ages and modern times, essential oils appear as a common remedy for various ailments and diseases caused by microorganisms.4

Modern science, starting with the creator of this concept of aromatherapy, Rene-Maurice Gatsosse, in 1937 and in his collaboration with a member of the French Academy of Sciences, Dr. Gatefosse, is increasingly learning about and clinically documenting the therapeutic effect of essential oils. Among many others, from the viewpoint of this article, the most important are the ability of essential oils to combat or inhibit the growth of microorganisms - bacteria, fungi, yeast and viruses. In relation to bacteria there is not the slightest doubt about the effectiveness of essential oils in bactericidal and bacteriostatic action: it is practically unknown for bacteria becoming resistant to essential oils; the situation is similar with fungi and yeast. The matter of viruses is limited to a few certain cases of virucidal and virustatic essential oils for herpes simplex2-5 (tea tree and eucalyptus essential oils); and for example, parotitis viruses, influenza virus A subtype H1N1 (cinnamon essential oil); SARS type coronavirus, yellow fever, dengue virus and AIV virus.6 There is no easy to understand reliable research work on the effects of essential oils on the current world threatening Coronavirus SARS CoV-2, which causes COVID-19 (coronavirus disease-2019). Extremely easy mutations in viruses make them very resistant to drugs. There is therefore no certainty that any of them or their mixture will be effective for this virus.

However, it is equally important that, in addition to antimicrobial properties, essential oils have an effect that supports the immunity of the human body.7 Because it is known, especially with the example of seasonal influenza virus, that vaccines give the best results. It can be assumed that the presence of essential oils will hinder infection to some extent. So, until you collect the results of reliable research and find an effective medicine, you can help, for example, by odourising the air at home or other rooms with essential oils using aromatherapy burners, diffusers or other devices designed for this purpose. Of course, this preventive and supportive measure will not replace all recommended hygiene measures, from careful hand washing to avoiding human communities or travelling to endangered areas. Based on the cited works of Polish scientists,8 the following mixture of oils with tea tree oil, which has antimicrobial and immunological properties, as well as eucalyptus, lemongrass and lavender oils can be prepared.

**AIR ODOURISING MIXTURE:**

<table>
<thead>
<tr>
<th>Essential oil</th>
<th>Drops</th>
</tr>
</thead>
<tbody>
<tr>
<td>(INCl name)</td>
<td></td>
</tr>
<tr>
<td>Melaleuca alternifolia oil</td>
<td>4</td>
</tr>
<tr>
<td>Lavandula angustifolia oil</td>
<td>3</td>
</tr>
<tr>
<td>Eucalyptus globulus oil</td>
<td>1</td>
</tr>
<tr>
<td>Cymbopogan citratus oil</td>
<td>1</td>
</tr>
</tbody>
</table>

10-20 drops of such a mixture per day (no more than one drop per m2/day) should be sprayed with water in the room in accordance with the diffuser manufacturer’s instructions.

**NOTE:** Use the highest quality essential oils and follow the manufacturer’s instructions, especially restrictions and warnings. Information on how to buy essential oils can be found at www.pta.org.pl

**PESTICIDE BACTERIA**

<table>
<thead>
<tr>
<th>Essential oil</th>
<th>Mix Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eucalyptus oil</td>
<td>1</td>
</tr>
<tr>
<td>Tea tree oil</td>
<td>2</td>
</tr>
<tr>
<td>Thyme oil</td>
<td>3</td>
</tr>
<tr>
<td>Lemon grass</td>
<td>4</td>
</tr>
<tr>
<td>Rose oil</td>
<td>5</td>
</tr>
</tbody>
</table>

**FOUR THIEVES VINEGAR**

<table>
<thead>
<tr>
<th>Herbs</th>
<th>Drops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lavender</td>
<td>4</td>
</tr>
<tr>
<td>Eucalyptus</td>
<td>3</td>
</tr>
<tr>
<td>Lemon grass</td>
<td>1</td>
</tr>
</tbody>
</table>

1-20 drops of such a mixture per day should be sprayed with water in the room in accordance with the diffuser manufacturer’s instructions.
**LITERATURE**

4. W.S. Brud, I. Konopacka-Brud, “Pachnąca Apteka” Łodź 2010

**AUTHOR’S NOTE**

Wladyslaw S. Brud, Ph.D., Ch.E., retired, long-term CEO and President of the Board of “Pollena-Aroma” Ltd. A company producing fragrances, food aromas and “Dr. Beta” aromatherapy-based cosmetics. A graduate of the Faculty of Chemistry at the Warsaw University of Technology, an expert in the field of essential oils, theory and psychology of fragrance, perfumery and fragrances. Member of the Executive Committee of the International Federation of Essential Oils and Aroma Trades (IFEA) and from 1993-1999 was President of IFEAT. Co-founder and first President of the Polish Aromatherapy Association, UNIDO consultant on essential oils, Member of the Polish Committee for Standardization of the 2nd and 3rd term and ISO TC-54. Lecturer at Warsaw Technical University, Academy of Cosmetology and Health Care, Warsaw and Medical University in Lodz. Co-author of the books “Fragrant Pharmacy - Secrets of Aromatherapy” Polish, Bulgarian and Russian editions, “Aromatherapy for Everyone” (in Polish), “Cosmetics Technology - Selected Issues” (in Polish), “Basics of Perfumery” (in Polish), “Aromatherapy in the Cosmetic and Spa Centers” (in Polish), “Handbook of Essential Oils” CRS, New York, “A Manual of Essential Oils Industry” UNIDO Vienna, creator of nearly 100 patents, scientific journalist. Winner of the BCC Polish Business Leader award, Member of the Main Council and Convention of the Business Center Club. e-mail: info@pta.org.pl

Find us at: ventos.com

Shanghai, New Jersey, Mexico City, Bogotá… We are all over there to reach everyone. It’s our new worldwide service, from Ventós to the world! São Paulo, Grasse, Singapore and Barcelona… Calling out around the planet. Are you ready for a brand new beat?

**PRINOVA PARTNERS WITH AGRUMARIA REGGINA**

Prinova has partnered with Agrumaria Reggina to be the exclusive distributor of essential oils in the USA, Canada, Mexico, Australia, Asia and Asia Pacific.

Leading aroma chemical and essential oil supplier Prinova is teaming up with Agrumaria Reggina, one of the largest citrus-based essential oils and juice manufacturers in Italy. The partnership will give Agrumaria expanded sales and marketing reach for their essential oil line to fulfill growing demand for “true-to-fruit” experiences in the flavour and fragrance, food and beverage, and beauty and homecare industries.

Bill Palagonia, General Manager of Prinova Aromas comments on the trends; “Consumer expectation of natural ingredients is evolving. The demand for a true to fruit flavour and aroma experience is increasing.”

Felice Chirico, Sales and Marketing Director of Agrumaria Reggina added: “We are extremely excited to start this collaboration with Prinova as we look to establish a global sales presence for our essential oil offering.”

**WORLD PERFUMERY CONGRESS IS COMING TO MIAMI IN 2021**

The World Perfumery Congress (WPC) will take place at the Miami Beach Convention Center from 29th June to 1st July 2021.

Originally slated for 2020, the event has been rescheduled due to the ongoing developments of COVID-19/coronavirus.

The three-day event features education and networking opportunities for brand marketers, fragrance suppliers, perfumers and allied professionals.

Media Contact: Eden Stuart estuart@allured.com

**MEMBER NEWS**

Moving ingredients from the VentósWorld to you
VANILLA
A TRADITIONAL FLAVOUR BUILT FOR THE FUTURE
BY CORINNE DUFFY,
SOLVAY AROMA PERFORMANCE

Based on tradition and part of our modern world, vanilla is one of the flavours most appreciated by consumers globally.

Historically, and still today, vanilla is grown in tropical climates around the globe, Madagascar being the country with the highest rate of vanilla exports worldwide. The green vanilla beans are still cultivated and cured by traditional methods which are highly labour-intensive, and the plantations are vulnerable to climatic variations.

In recent years, demand for natural vanilla has soared as the popularity of foodstuffs free of artificial flavourings continues to grow. Consequently, vanilla bean prices have increased greatly with speculation, accompanied by a decrease of quality linked to early harvesting.

The growing demand in vanilla flavours cannot be met by the limited amount of cultivated vanilla bean crops; so, how can we satisfy demand for the real thing when its supply is running so dangerously low?

The natural answer is vanilla, the principle molecule found in cured natural vanilla beans: in order to satisfy the increasing global demand for this highly favoured flavour, ingredients suppliers have developed a range of vanillin types, ranging from synthetic to natural vanillins, including US natural vanillins. In the graph opposite, we can see the various types of vanillins commercially available.

FROM CURED VANILLA BEANS

Originally, vanillin comes from vanilla beans in the form of glucovanillin, linked to a carbohydrate moiety and released by the curing process. Vanillin is the main organoleptic characteristic aroma component, naturally occuring in cured vanilla beans between 1 and 2% of the dry matter.

US NATURAL VANILLINS

The main product available on the market is vanillin ex-eugenol, produced by conversion of eugenol to isoeugenol, followed by catalytic oxidation, the process conditions not meeting the definition of natural process according to EU regulation EC 1334/2008, and accepted as natural in the US market and in some countries such as Australia.

A US natural vanillin was recently produced by Solvay on an industrial scale from natural guaiacol by a process compliant with the FDA regulation in force. Rhovanil® US Not displays a pure vanillin profile, making it a good substitute for synthetic vanillin for US natural flavours.

By Bioconversion of Ferulic Acid

Driven by consumer demand for natural flavours in the 1990s, a growing interest to produce natural vanillin through bioconversion from sources other than the vanilla bean was observed. One of the most intensively studied processes to produce natural vanillin is the bioconversion of ferulic acid, naturally occurring in the cell walls of plants such as rice or corn.

Vanillin obtained from ferulic acid, available on the market since the 2000s, strictly meets the EU Ec 1334/2008 and US regulations (FDA) 21CFR101.22 on natural flavours. It is the main product used in Europe, especially in natural vanilla flavours (95/5), in natural flavours requiring a global label, but also in natural flavours in the USA due to TTB ruling.

Given the difference in cost and labelling for vanillins, the need for authentication is greater than ever, to ensure the traceability of origin. Modern methods are available:

- 14C datation can determine if an aroma chemical is biosourced or not, and will differentiate synthetic and most of natural vanillins.
- SNIF NMR techniques are now widely used in the flavour industry and a combination thereof will determine the actual origin of a natural vanillin: most recent techniques such as 13C IRMS will likely become more accessible in the coming years.

Naturality of such a substance is a regulatory definition: regulatory experts and audits are necessary to ensure the naturalness of processes in relation to applicable legislation.

CONCLUSION

Natural vanillin is an interesting case study as it is widely used in natural flavours and because it can be derived from various sources. The flavour/ingredient industry is aware of an increased demand from the food manufacturers and final consumers for authenticity and traceability. Therefore, more advanced analytical methods have been developed to discriminate between natural versus synthetic routes and are now used on a regular basis to comply with regulations for naturalness.
IFEAT’S THIRD TOPICAL ROUNDTABLE CITRUS

BY PETER GREENHALGH

The third IFEAT Roundtable took place at the Bali Conference last year and was attended by 55 participants representing 49 organisations and 20 countries. IFEAT Roundtables aim to facilitate debate and information exchange among IFEAT Members around important topics common to the F&F industry. The debate this time was on citrus and the session was chaired by IFEAT Executive Committee member, Dominique Roques, along with Richard Pisano Jnr. of Citrus and Allied.

Citrus is a large sector and many topics and opinions were expressed but there were few disagreements. The discussions took place against a backdrop of substantial price falls in all three major citrus oils – orange, lemon and grapefruit - ensuring that 2019 would be a memorable year for all those involved in the sector.

Three factors were cited:
- Pests and diseases, especially citrus greening;
- Alternative land use both in terms of growing other crops and real estate;
- Trends in demand for fresh citrus fruit and juice.

The subject of pesticide residues is a complex, multi-faceted, dynamic issue. Usage varies between geographical locations with more used in humid moist regions than in drier areas. Regulation is at country or regional level (e.g. EU) but not global. Some countries have been better at minimising pesticide residues by improved practices but this will remain an important issue for many reasons, including:

1. Other than weather, what are the most important factors affecting citrus production?

To facilitate discussion statements and questions were posed and below is a summary of some of the topics discussed. A longer report will soon be available on the IFEAT website (www.ifeat.org).

2. Is your producing region able to satisfy buyers’ requirements regarding limits on agricultural residues?

3. Citrus price volatility and inventory levels - can any mitigating measures be taken?

The nature of agriculture and the increasingly less predictable impact of climatic variations and disease are key factors increasing the volatility of production volumes and prices. A range of related topics was discussed: cyclical economic patterns and relocation of production; rising fresh fruit consumption and its impact on the availability of fruit for processing; citrus oils as only a by-product of citrus production; increased company concentration in production, processing and consumption, as well as geographical location; the long gestation period between planting and yielding citrus, thus limiting the supply response. It was argued that price volatility has intensified because of lower inventory levels on both the supply and demand sides. This arises from a number of factors including the growing concentration of production, processing, consumer product production, JIT (Just-in-Time) manufacturing and financial management practices. Markets are more fragile today than a few decades ago. It was suggested that in the medium term the holding of low inventories might even cost more money than holding larger inventories.

In general it was felt that price volatility would always be with us but it could be mitigated to some extent by diversifying production areas, increasing inventory levels and the number of processors, using other citrus by-products to provide flavour and lowering the amount of citrus oils used in a product, and improving market information and transparency. Greater diversity could provide greater resilience in the citrus market.

During the meeting other topics discussed included:
- For many the annual contract requests in December for hundreds of products did not really make sense but is unlikely to change. Requests are becoming increasingly difficult to meet and sometimes don’t match the reality and costs in a country.
- The impact of climate change on production areas and planting decisions.
- The millions of families whose livelihoods are dependent on the citrus sector and the importance of creating a more sustainable production and market environment, particularly for the growers at the beginning of the value chain.
- The differing market dynamics impacting the range of citrus products produced, which in turn can have diverse effects on the range of stakeholders in the value chain.

Richard Pisano Jnr. concluded by saying: "If you love what you do, you have a very good life. And I think here a lot of people love what they do, and it is a real blessing."
Information Letter N°1090 - 9th April 2020

The overall regulatory framework is complex, with the intertwining of international, European and national rules. The IFRA-IOFI Guidance provides a summary of the national implementing ABS legislation in selected key countries for the F&F industry, notably related to ‘utilisation’ and the extent to which ‘derivatives’ fall in scope. This guidance document aims at describing a shared understanding of these concepts in the context of flavours and fragrances. It shall neither replace national legislations nor the interpretation that national authorities could make of those concepts, which remain the main sources for legal interpretation.

In addition, it is commonly acknowledged that there is still a lack of clarity on specific concepts of the Nagoya Protocol, notably related to the definition of ‘utilisation’ and the extent to which ‘derivatives’ fall in scope. This guidance document aims at describing a shared understanding of these concepts in the context of flavours and fragrances. It shall neither replace national legislations nor the interpretation that national authorities could make of those concepts, which remain the main sources for legal interpretation.

The Nagoya Protocol requires parties (States) to establish a clear and transparent legally binding framework determining how researchers and companies who utilise genetic resources or traditional knowledge associated with genetic resources, should obtain access to them and how benefits resulting from the utilisation are fairly and equitably shared. As a result, a wide variety of Access and Benefit Sharing (ABS) regulations have arisen worldwide, not generally harmonised and often not easy to interpret, thereby often creating a situation of legal uncertainty for the industry at large.

The F&F industry fully supports the objectives of the Nagoya Protocol which aims to share benefits from the utilisation of genetic resources or associated traditional knowledge with the respective holders and should be regarded as an element of sustainable and ethical sourcing of natural raw materials.

Ensuring compliance requires traceability and therefore awareness and due diligence activities along the whole supply chain. In the case of the F&F industry, the said supply chain is complex and therefore requires excellent understanding by and communication between all stakeholders involved.

With those elements in mind, this document aims to:
- Support flavour and fragrance industry members in understanding the Nagoya Protocol and identifying its potential implications on their business and operations, while providing some keys of interpretation on some national legislations implementing that Protocol, as well as other ABS legislations.
- Support the development of company internal policies and processes to properly ensure compliance with the obligations created by the Protocol and its implementing legislations with regard to both the provider and the user countries.

Required action: In case of any new national regulatory development in a country of interest to the F&F industry, users of the Guidance are kindly requested to inform IOFI and IFRA for update of the Guidance Document.

For further information: Please contact Maxime Marchal. Email: mmarchal@iofi.org

IFEA Members can read more and see the enclosures at https://ifeat.org/category/scientific-updates

Call For Member News

For IFEAT E-News Bulletins & IFEATWorld

Word Count:
- News items and announcements - short, topical, news oriented (no obvious promotion will be accepted)
- Award or milestone recognition
- Mergers/collaborations
- Larger articles – in depth discussions, projects/social impact studies, socio-economic/environmental project(s), case studies, market analysis, etc.

CONTRIBUTIONS
Articles should be submitted in MS Word format.

Related IOFI Information Letters: 1546, 1548, 1653, 1669, 1677

Call for Member News

Article Submission Guidelines:
- Large articles – maximum 1,000 words
- Medium articles – 500 to 200 words
- Short articles – up to 500 words
- News items and announcements – maximum 1,000 words
- Major articles – maximum 1,000 words

Please email any press releases, articles or news items to Tina Carne, IFEATWorld Editor: ifeatworld@ifeat.org

IFEAWorld Deadlines:
1. Spring Issue (Submissions due second week of February)
2. Summer Issue (Submissions due second week May)
3. Autumn/Conference Issue (Submissions due second week August)
4. Winter Issue (Submissions due second week November)

Word Count:
- News items and announcements - short, topical, news oriented (no obvious promotion will be accepted)
- Award or milestone recognition
- Mergers/collaborations
- Larger articles – in depth discussions, projects/social impact studies, socio-economic/environmental project(s), case studies, market analysis, etc.

Contributions:
Articles should be submitted in MS Word format.

Please Note:
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G4 is a public listed company with more than 65 years experience in fragrances, flavours, camphor and aroma ingredients. It is one of the few fully integrated F&F companies in India, using sustainable processes and systems. The company operates from three manufacturing sites.

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NEW IFEAT MEMBERS
Below is a list of new IFEAT members who had joined by 31st May 2020