IFEAT 2021

# ONLINE CONFERENCE ROUNDUP

**BY PETER GREENHALGH**

The complexities of the F&F ingredients sector were amply demonstrated by the wide and expanding range of relevant and important topics discussed at IFEAT's successful second 2021 Online Conference (OC). "Keeping the Industry Together" was the theme and this was more than achieved during the two days of live conference presentations and discussions as well as five months of access to the excellent Whova online platform closing on 31st December 2021.

In all there were 320 registered delegates, including speakers, 14 exhibitors and 13 sponsors.

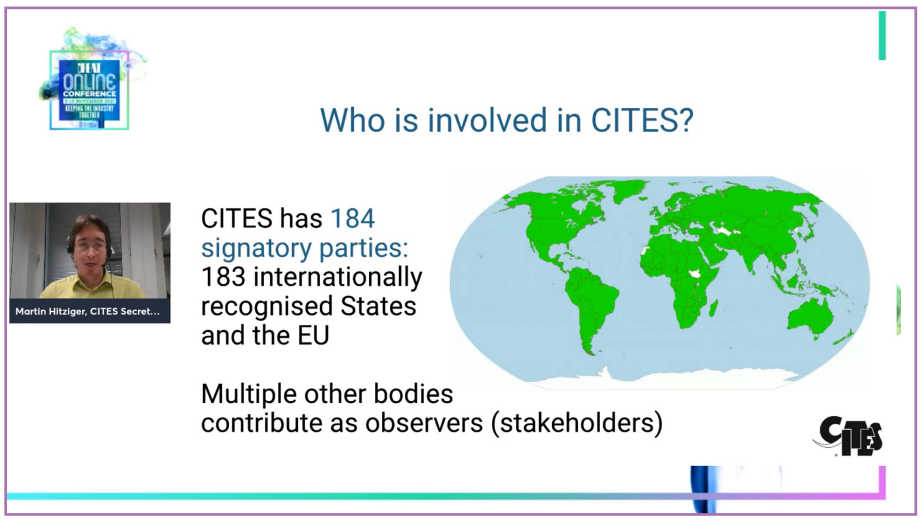
Registration opened in mid-July and once registered, delegates were able to hold video meetings, chat to and begin networking with fellow delegates as well as visit exhibitors and sponsors and see their videos and other postings. Following the two days of live conference on 9th and 10th November, delegates have been able to watch on-demand all the live sessions, as well as view presentations from previous IFEAT Conferences. Another popular innovation at the OC was the several speed networking sessions that IFEAT organised during the conference at which delegates could quickly meet up. In the feedback we received, it was clear that delegates found this to be an enjoyable way to meet new people at the OC via the Whova platform.

Despite the restrictions of the on-going pandemic IFEAT has continued to make its presence felt in the world of F&F ingredients. This was demonstrated in the Welcome Address from Hussein Fakhry, the IFEAT Chair, who reviewed the responses made by IFEAT to the unprecedented challenges faced in 2020 and 2021. Various initiatives are being made in all fields of IFEAT's activities including building new partnerships among the scientific, regulatory and academic communities. These are vital to mastering the paradigm shifts that are taking place in the F&F industry; many of the challenges being faced were discussed during the OC sessions. Hussein considered the last two years a period of wake-up calls to which our industry needed to find solutions to the range of challenges presented. These included issues such as climate change, sustainability, legislative and regulatory issues, and product traceability, many of which were discussion topics over the two days. Nevertheless, he remained optimistic about the year ahead, particularly the Vancouver Conference in October 2022, on which Alan Brown, the Vancouver Committee Chair, made a short presentation (more details on the Vancouver Conference: *The Pacific Reunion* can be found on page 12). Also announced at the OC were the two IFEAT Study Tours to take place in 2022. First, a Focused Study Tour from 20th to 23rd February to Murcia in southern Spain to visit lemon production and processing operations. Second, a tour to South Africa from 4th to 12th November 2022, to see the harvesting and processing operations of a range of familiar and unique essential oil crops. (More details on these STs can be found on page 13).

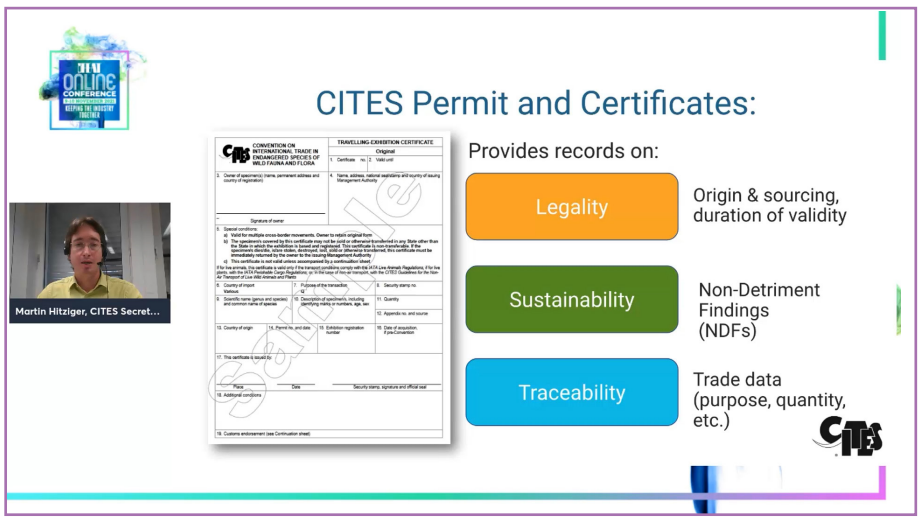
On the first day, following the Welcome and Vancouver presentations, there were four further sessions. Two presentations and two panel discussions on topics and issues directly relevant to those involved in the production, processing, trading, and utilisation of F&F ingredients. Throughout the conference delegates were able to post questions and all the sessions provided excellent and detailed analysis of the topics being discussed as well as the opportunity for delegates to contribute to the discussions.

*The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)* was the first presentation by Martin Hitziger of CITES. He concentrated on species


**MARTIN HITZIGER** - ***The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)***




**MARTIN HITZIGER** - ***The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)***




**MARTIN HITZIGER** - ***The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)***

and products of relevance to the F&F sector that are regulated under CITES. Some 1,280 MAP (medicinal and aromatic products) are listed under CITES, many of which are used for essential oils. Under CITES rules, trade in products must satisfy three criteria: legal, sustainable, and traceable. Trade in 97% of CITES-listed products can be legally traded, even if they are controlled but it is difficult to quantify the volumes involved. Under CITES there are three Appendices, under which 38,000 products are listed. Appendix A relates to seriously endangered products, Appendix B contains products not threatened but controlled and Appendix C relates to single countries asking for assistance. Two products of particular interest to IFEAT members, frankincense (which is not listed under CITES) and guaiac wood, were discussed. The detailed ongoing administrative, regulatory and policy processes to further develop CITES regulations in the future were described. Further details can be obtained from the CITES website at: **www.CITES.org**

*Citrus and Mints: Concerns of Small and Large Farming for the Future of Essential Oils* was the first panel discussion chaired by Dominique Roques (Firmenich). The panel was comprised of two major Latin American citrus producers: Manuel Suarez Altuna (San Miguel) and Sigifredo Gudiño Jr (Citrojugo), and two mint producers: Vaibhav Agrawal (Norex Flavors) and Greg Biza (RCM International). The panel compared and contrasted citrus and mint oils which are by far the two largest groups of essential oils used by a large variety of industries, including F&F, pharmaceuticals, and aromatherapy. Citrus is grown and processed primarily by large and medium scale operations with farms often more than 300 ha. Meanwhile mint oils are predominantly small-scale operations with over one million Indian smallholders growing mint on less than 1 ha. However, there were examples of the opposite, namely US peppermint and spearmint production (where farms are often 250 ha to 1,000 ha) and European citrus operations. The panel and delegates exchanged views on aspects of production, processing and sustainability policies. The relative merits of different production systems were discussed - from technical, economic, and environmental perspectives and the general view was that both large and small-scale operations would continue to exist.

*Agricultural Residues in Naturals: Scientific and Regulatory Landscape* was the second panel discussion chaired by Jonathan Bonello, IFEAT's Chief Scientific Officer. The panel was made up of industry professionals involved in various aspects of the value chain: John Cavallo (Citromax), Ramkumar Menon (World Spice Organisation), Hans Braeckman (Primoris) and Robert Anderson (Takasago). Pesticide residues are a complex topic that has become a major issue for some essential oils and is not going to go away. The topic of contaminants is not a new one but it is of increasing importance to our industry, as illustrated by the growing number of bans, especially in the EU and USA and sometimes at short notice of important pesticides, often commonly used as PPPs (Plant Protection Products). The European debate on PPPs is becoming more contentious and the European Commission is reviewing its Sustainable Use of Pesticides Directive, as part of its flagship Green Deal initiative launched in December 2020. Similar regulatory initiatives are already ongoing in other regions of the world, some of which will be influenced by the EU's approach.

The panellists shared their wide-ranging insights on the short, medium, and longer-term aspects on a range of complex issues which included:

- The need for a more realistic global approach to pesticides and their residues including managing and anticipating regional legislative differences and the possible impact on essential oil availability.

- The constantly evolving regulatory framework on MRLs (maximum residue levels) and often very low contaminant concentrations, and the impact of their further processing on residue concentration.

- The technical challenges faced in developing accurate and reproducible analytical protocols for identifying and quantifying PPPs in agricultural and downstream products.

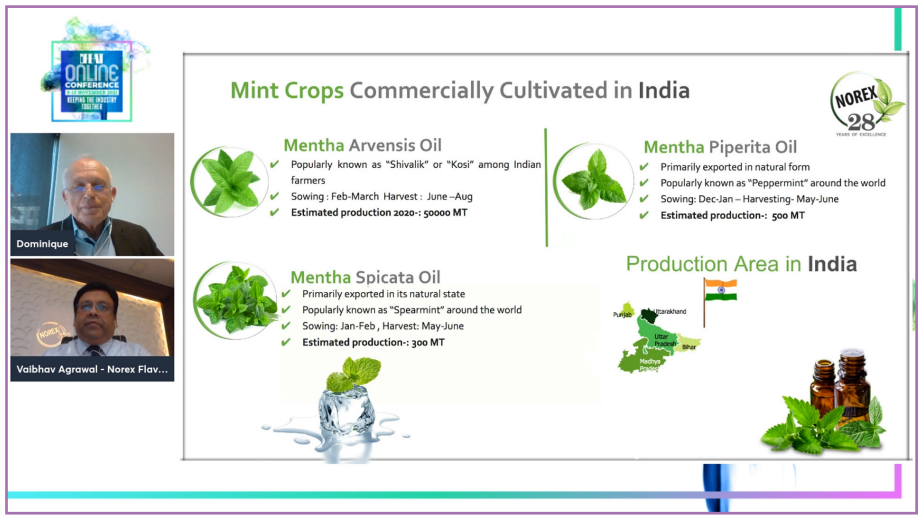
- The challenges faced, particularly by small producers and traders, and their ability to stay in business faced with the expanding regulatory environment and without the use of PPPs. Because of rising global demand these growers are needed to increase output of essential oils and related natural products, while simultaneously trying to minimise the impact of agriculture on the environment, climate change, water demand and biodiversity.

- How can regulatory changes be anticipated so that the necessary facts and data are collected and made available in time for advocacy efforts with competent authorities.

- What alternatives are or may be available as replacements for synthetic PPPs?

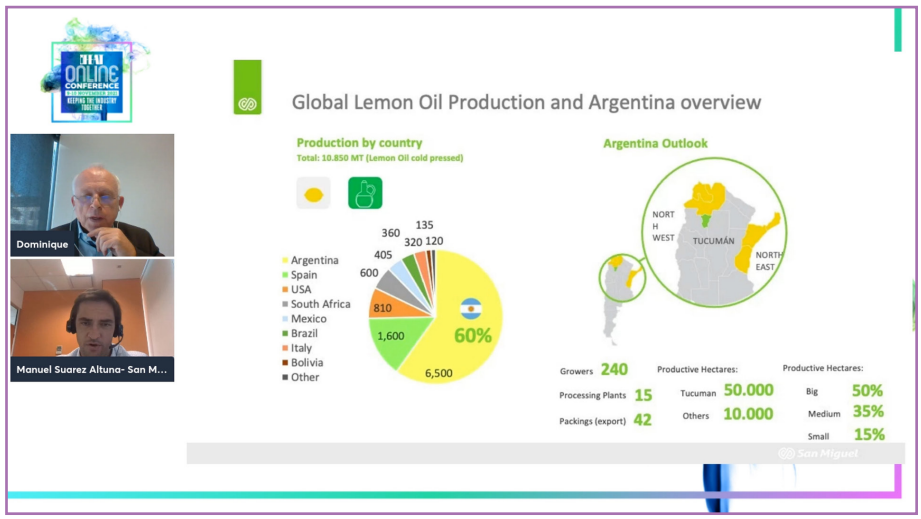
*Materials Metabolism: Green Chemistry for a Circular Economy* was an inspirational presentation by the serial entrepreneur Dr John Warner of the Zymergen Corporation, where he is helping to design and create commercial technologies inspired from nature consistent with the principles of green chemistry. He argued that in trying to develop more sustainable products to fit within the circular economy we need to learn from the patterns within nature. There exists a circular pendulum that swings between the natural world of stable ecosystems and the human built world of products. Centrally located between these two systems exists the domain of the "materials metabolism", the molecular mechanistic foundation for the assembly and disassembly of molecules and materials.

Nature typically carries out the deconstruction and construction of




## DOMINIQUE ROQUES & VAIBHAV AGRAWAL

***- Citrus and Mints: Concerns of Small and Large Farming for the Future of Essential Oils***




## DOMINIQUE ROQUES & MANUEL SUAREZ ALTUNA

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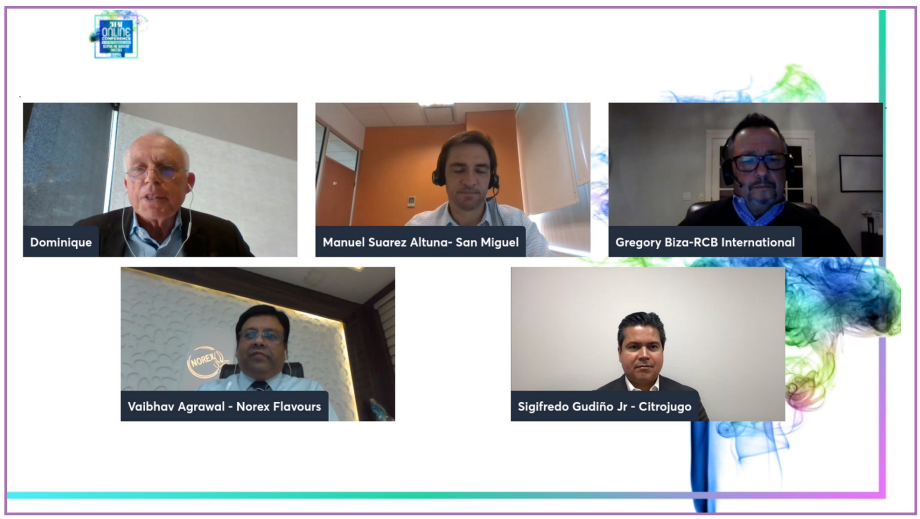
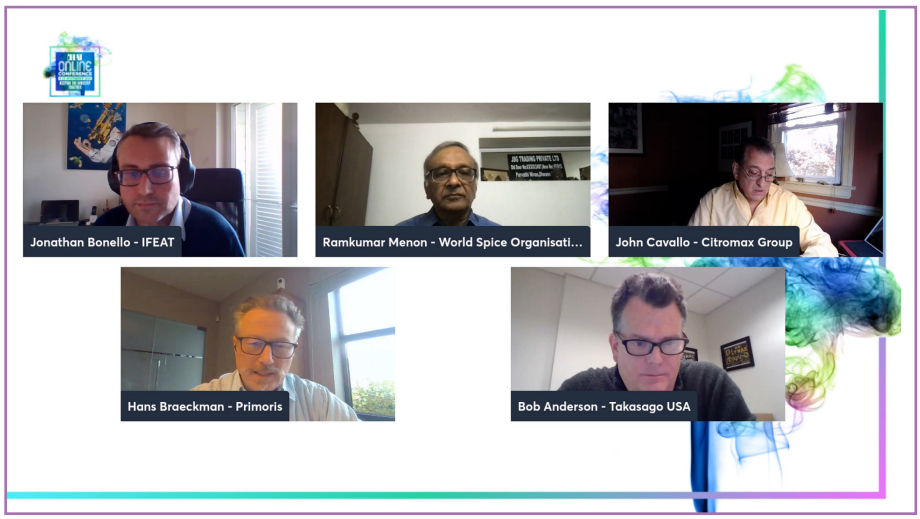



## DOMINIQUE ROQUES WITH MANUEL SUAREZ ALTUNA, GREG BIZA, VAIBHAV AGRAWAL & SIGIFREDO GUDIÑO




## JONATHAN BONELLO WITH RAMKUMAR MENON, JOHN CAVALLO, HANS BRAECKMAN & ROBERT ANDERSON - *Agricultural Residues in Naturals: Scientific and Regulatory Landscape*

materials through catabolism and anabolism, performing both metabolic processes synchronously. Human industrial design has evolved to perform the synthesis and breakdown processes in spatially and temporarily separate spaces. The "materials metabolism" concept was discussed and, citing many of his own inventions, he illustrated how the principles of green chemistry provide a logical framework for the design of products.

The first day of the live conference ended with the second speed networking session of the day. The sessions last for thirty minutes and are a means of using the platform to meet new people. Every five minutes a delegate would join a new table with three others. There were two further networking sessions on the second day.

*Traceability: Market Expectations and Business Reality: Where do we Stand?* was the first session of the second day of the OC. The panel discussion was moderated by Geemon Korah (Mane Kancor) and Dominique Roques (Firmenich), two leading figures from the F&F industry with a wealth of industry experience. There were six panellists representing producers, traders, and end users along the supply chain namely Nicola Laubscher (Eucaforest), Gillian Bleimann (Berjé), Tim Valentiner (doTERRA), MiMa Jacarandas (Jacarandas), Eduardo Mattoso (Kaapi Ingredients), and Stephane Zwaans (Takasago).

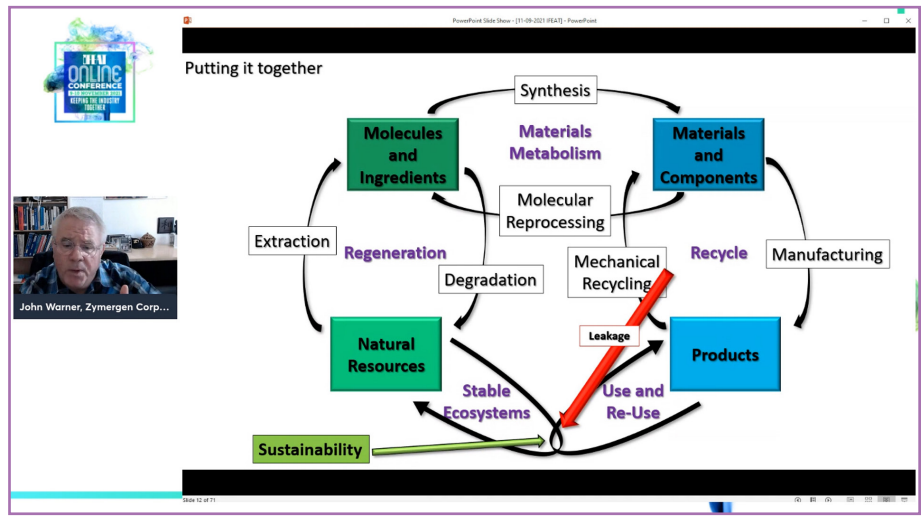
In recent years there has been a dramatic increase in industry requirements for traceability of essential oils and other ingredients along the supply chain from growers, collectors, and processors at the origin to end users. One key factor has been the growing demand from consumers for information and transparency around the origin of their fragrance and flavour ingredients and the livelihoods of the farming communities involved in their production and initial processing. End users are now requesting in-depth information from producers and traders, with the aim of looking for reassurances around employment conditions, human rights, social and environmental issues.

Traceability is at the heart of these new expectations and has brought producers face to face with a range of new challenges along with a degree of complexity which can be high. There is the need to introduce new systems, train staff and producers as well as provide additional finance. For some wild harvested products, collectors are reluctant to reveal their sources. For many, traceability is no longer an option but a requirement if they are to stay in business. Rapid technological advancements (e.g., GPS, smartphone apps) along with innovative funding techniques, certification and auditing schemes have facilitated the implementation and expansion of traceability schemes - but who should bear these increased costs? The panellists discussed the impact of traceability on their operations, what efforts were being made to ensure traceability, whether traceability was mandatory, who should bear the costs of this added complexity, and if there is a shared vision between producers and users about what should be done. Traceability helps to facilitate the production of products that are ethically sourced, of more consistent quality and purity as well as assisting accountability. One overwhelming sentiment among the discussants was the need to better support farmers, many of whom are at or near to the poverty line. Without support in a variety of forms, they will be unable to meet the traceability and sustainability requests made upon them. Consumers must be willing to pay a premium price to cover the traceability costs.

*The Future of Sustainable Natural Products and Biotechnology: Expectations and Reality*, was the second session of the day with five knowledgeable panellists: Guillaume Meunier (Solvay), Maria Julia Oliva (UEBT), David Brocklehurst (Alpha Santanol), Prasobh Prasad (Mane Kancor Ingredients) and Philip Kuruvilla (Indian National Sustainable Spice Programme). Despite the OC being accessed live from five continents, this was the only time during the conference that one of the participants could not participate because of technical issues. Sustainability of F&F ingredients and their end uses is a complex and dynamic balance between economic, environmental, and social aspects and includes competing objectives. It is a broad concept that is present in many current discussions and plays a key role in investment decisions.

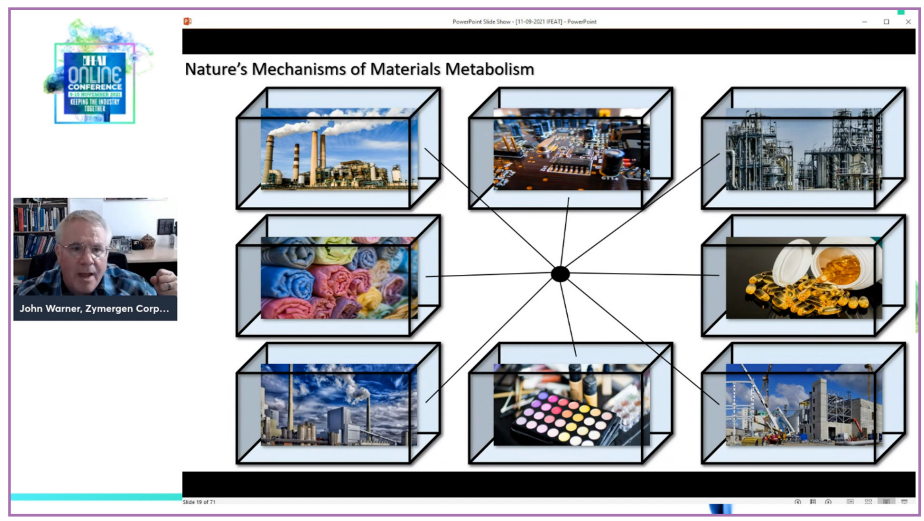
The session started with the moderator, Alain Frix (Allchemix), providing some fascinating summary data on the dominant sources and renewability of F&F ingredients. The major ingredient supply source is synthetics, predominantly from non-renewable petrochemicals, accounting yearly for approximately 500,000 MT. The second largest supply of aroma chemicals, approximately 110,000 MT, is from turpentine obtained either by tapping pine trees or as a by-product of softwood timber pulping to produce cellulose fibre which is predominantly used for paper production. These ingredients are synthetic but are renewable because they are obtained from pine trees. However, turpentine is a by-product and production does not directly respond to F&F industry demands.

In contrast, essential oil production is renewable and directly responsive to F&F demand. Annual production is approximately 105,000 MT, similar to pine oleochemicals. Essential oils can be separated into two major categories: citrus oils, accounting for approximately half the total, and some several hundred non-citrus oils. Citrus oils are predominantly by-products of the citrus juice industry while non-citrus oils are the sole real source of renewable products intentionally produced for the F&F market. Biotech products account for a very small proportion of F&F ingredients and it seems unlikely that biotechnology will




**DR JOHN WARNER**

***- Materials Metabolism: Green Chemistry for a Circular Economy***

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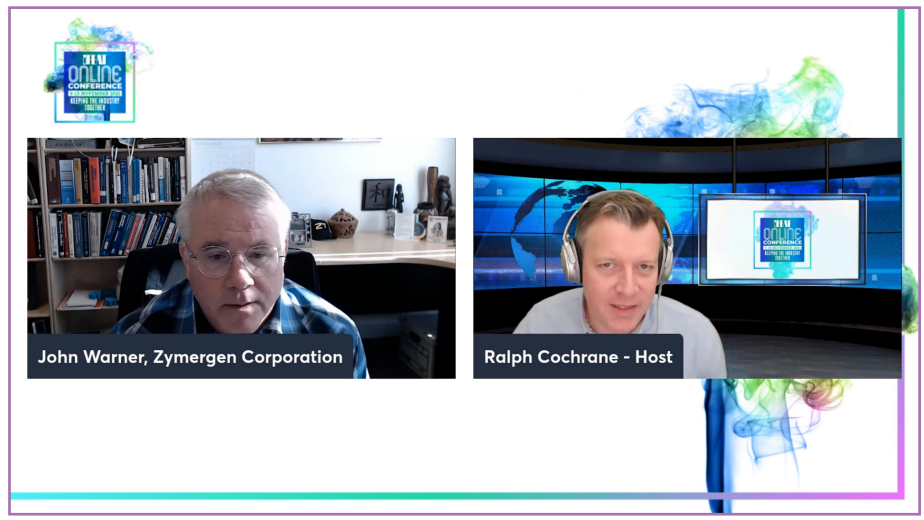


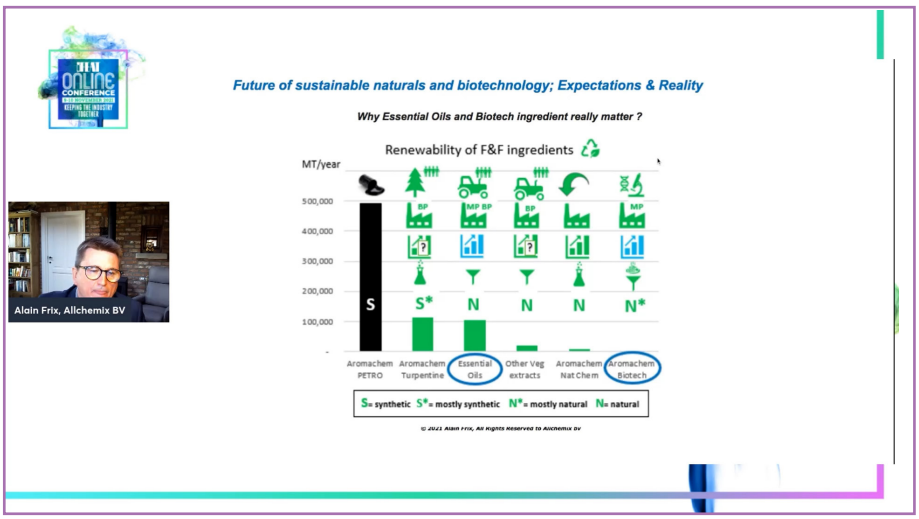

**DR JOHN WARNER & RALPH COCHRANE**

***- Materials Metabolism: Green Chemistry for a Circular Economy***

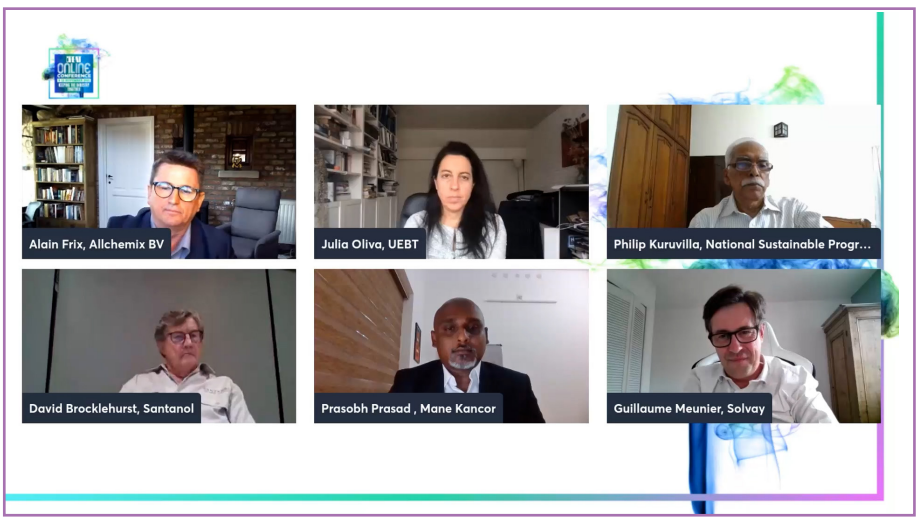
play a significant role in supplying F&F ingredients during the next decade. Nevertheless, these biotechnologies have enormous future potential but in the next decade are likely to only affect products valued over US$50/kg.

There are many interrelated factors that define a sustainable product including renewability, biodegradability, carbon footprint, toxicity, water management, rural economy, fair trade, farmers' livelihoods, extraction technology, plant protection, soil degradation, biodiversity preservation, transportation, and green chemistry. The panel discussion evaluated some of the sustainability expectations for essential oils and biotech products. Producers of essential oils and/or aromatic molecules need guidance in prioritising their sustainability investments. The larger essential oil producers (e.g., in citrus) find it easier to adopt the sustainable, traceability, transparency and environment practices that are increasingly required in the supply chain than do smallholders. If smallholders are to adopt sustainability practices (and they are doing it) they invariably need the technical and financial support of other larger stakeholders in the supply chain. Smallholders will adopt new sustainability practices if the knowledge/finance/technical support and economic incentives are available for them. It was recognised that commitment was needed by the trade and end users to support sustainable initiatives.

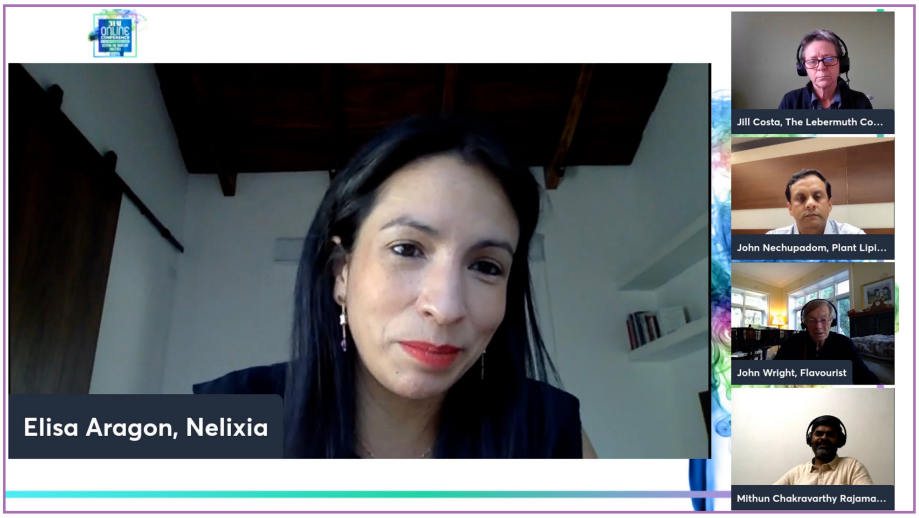
*The Cardamom Profile Session* was the first part of IFEAT's planned expansion of its educational programme, more details of which will be announced next year. The OC saw the launch of its Online Learning Series (OLS) with a 90-minute course on cardamom oil. The first component of the course was two presentations including short videos on the two dominant cardamom producers: Guatemala by Elisa Aragon (Nelixia) and India by Mithun Chakravarthy Rajamannar (Cardamom Products). Each presentation detailed aspects of production, processing, trade, uses and the various challenges faced. The second component was the perfumer Jill Costa (Lebermuth) and the flavourist John Wright discussing the flavour and fragrance characteristics of samples of cardamom oil from




**ALAIN FRIX** - ***The Future of Sustainable Natural Products and Biotechnology: Expectations and Reality***




**ALAIN FRIX WITH JULIA OLIVA, PHILIP KURUVILLA, DAVID BROCKLEHURST, PRASOBH PRASAD & GUILLAUME MEUNIER**




**ELISA ARAGON WITH JILL COSTA, JOHN NECHUPADOM, JOHN WRIGHT & MITHUN CHAKRAVARTHY RAJAMANNAR**
***- The Cardamom Profile Session***

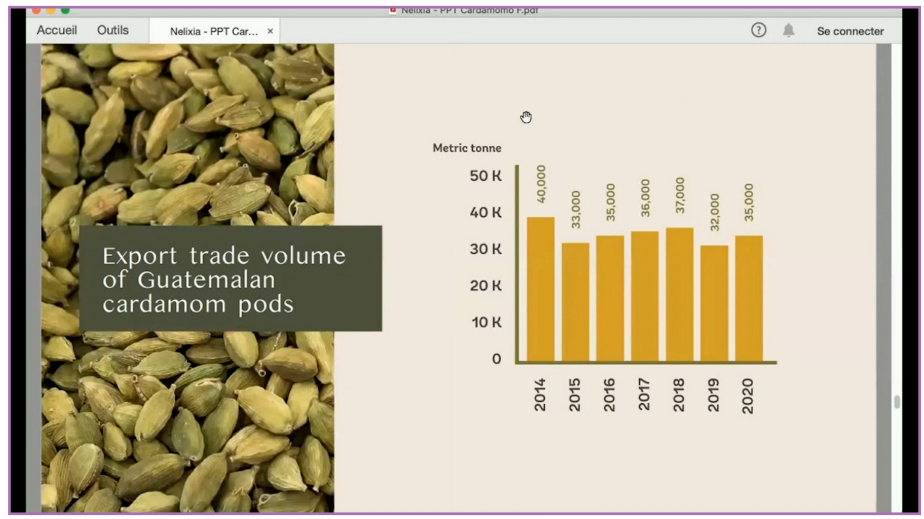
these origins. Finally, a live panel discussion of the presentations, including questions from delegates and moderated by John Nechupadom, ended this very successful session. IFEAT is producing a socio-economic report on cardamom oil which will be published in IFEATWORLD in 2022.

*EU Chemicals Strategy for Sustainability – a Paradigm Shift in EU Chemicals Management* given by Sylvie Lemoine of CEFIC was the final session. Her detailed presentation provided an overview of the main changes introduced under the EU Chemicals Strategy for Sustainability in terms of both EU chemicals legislation (such as the revision of REACH and CLP Regulations) and managing the transition to safe and sustainable chemicals. It highlighted the areas that have been identified by the chemical industry as most challenging and explored potential solutions. You can find out more about CEFIC policies here: https://bit.ly/32MDXal

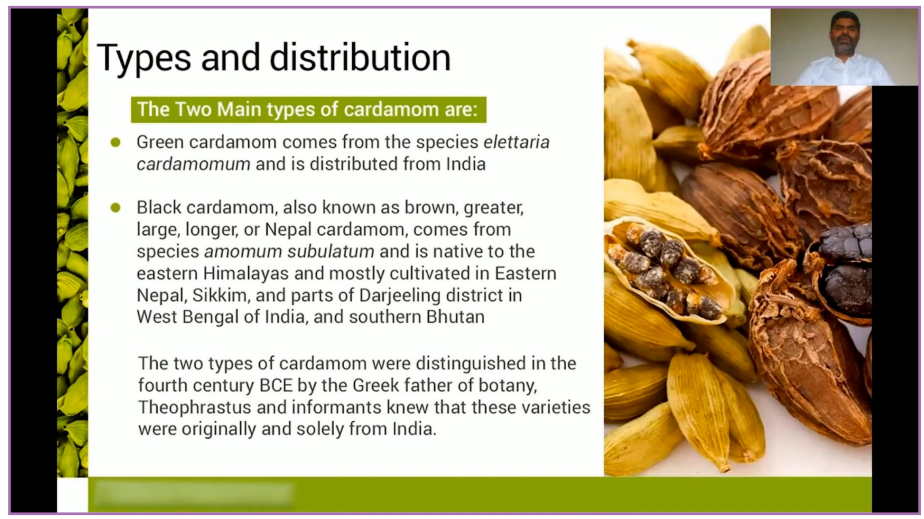
## SOME CONCLUDING REMARKS

**The OC proved to be very successful from several viewpoints:**

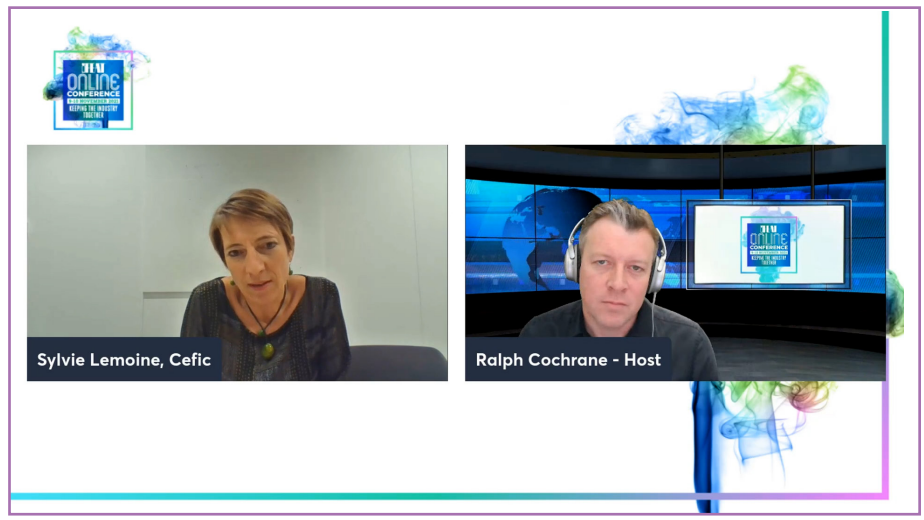
- The detailed and diverse presentations and discussions facilitated a great exchange of knowledge and experience on the many and growing complex challenges facing the F&F sector.
- Going forward the experience and knowledge acquired will be beneficial in organising future IFEAT events including the planned hybrid Vancouver Conference in October 2022. This should enable greater participation of people from the F&F sector in IFEAT's increasingly diverse activities.
- It saw the successful launch of IFEAT's Online Learning Series with a course on cardamom oil. This is part of IFEAT's efforts to expand its educational role, particularly regarding the training of the next generation of professionals in the F&F sector.
- It provided an excellent platform on which delegates were able to network and conduct business as well as update themselves on the increasing challenges being faced by the F&F industry.




THE CARDAMOM PROFILE SESSION




THE CARDAMOM PROFILE SESSION




SYLVIE LEMOINE & RALPH COCHRANE (HOST)
***- EU Chemicals Strategy for Sustainability – a Paradigm Shift in EU Chemicals Management***

Such online events are likely to play an increasing role in our fascinating and beautiful industry but it is recognised that it is impossible to totally replicate several of the activities of a physical conference e.g., face-to-face meetings, smelling and tasting products, impromptu meetings and discussions, social interactions, cultural exchanges,entertainment, and an accompanying person's programme. We are looking forward very much to being able to do all these things once again at the forthcoming Vancouver Conference in October 2022!

## WE WOULD LIKE TO THANK THE SPONSORS OF THE IFEAT 2021 ONLINE CONFERENCE

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