

# IFEAT 2010

Mediterranean and North African essential oils, regulatory challenges, and natural flavor definitions in the United States and European Union

This year's meeting of the International Federation of Essential Oils and Aroma Trades (IFEAT) attracted an unprecedented attendance of 800-plus delegates celebrating what has been a good year for the industry. Attendees benefited from networking opportunities and a wide range of presentations from regional and industry experts.

## Egypt

Moustafa Hashem (Hashem Brothers for Essential Oils & Aromatic Products), discussing the ingredients of Egypt, noted that the domestic food market is about \$2 billion. Key ingredient production includes cumin seed oil (10–12 tons/year), which can be hampered by high temperatures; marjoram oil (5–7 tons/year); neroli oil and concrete (350–450 kg/year, up from 100 kg/year in 1994); carnation concrete (250 kg/year); petitgrain (15–20 tons/year); onion oil (1 ton/year); and violet leaf concrete (800 kg/year). Egypt, Hashem noted, produces 70% of the world supply of geranium oil, and some 50% of jasmine (3.5–4.0 tons/year), though it is now competing with India on the latter crop. Overall, he added, production of oils faces challenge

from competing crops, indifference from farmers and overuse of pesticides.

## Tunisia

Chedly Belkhodja (Les Vergers De Tunisie), meanwhile, provided an overview of Tunisian oils, including neroli, rosemary and myrtle. Neroli was the first material developed in the region (1903), followed by petitgrain in 1956 and orange flower concrete and waters in the 1960s. There are currently 400 ha of bitter orange grown in country; 350,000 ha of wild rosemary; and 40,000 ha of wild myrtle. Soraya Ben Djenana (Carthago Essences) added that 40% of bitter orange crops are used domestically. Producers create and export products such as neroli oil, orange flower water, orange flower concentrate, petitgrain oil and others. Tunisian neroli oil tends to have a linalool level of about 40%, she added. This figure varies throughout the growing cycle. Of the materials produced for export, some 88% are shipped to France.

While 250 metric tons of rosemary grew in the country in 1960s, production over the last four years has fallen to 80–100 metric tons, Belkhodja continued. Rosemary price



Alain Frix (Lyondell Flavours & Fragrances).



Ian McLean (S&D Aroma).



Jan Demyttenaere (EFFA).



Kim Bleimann (Berjé) and Chedly Belkhodja (Les Vergers De Tunisie).



Attendees dined in tents during the annual dinner at La Palmeraie.





*IFEAT board and committees; seated: Michael Boudjouk (Medallion International, Inc.), Alastair Hitchen (Lionel Hitchen Essential Oils Ltd.) and Ramon Bordas (Bordas); second row: Raul Amigo (Amigo & Arditi), Wladyslaw Brud (Pollena-Aroma), Ravi Sangneria (Ultra International Ltd.), Depapriya Nugawela (Link Natural Products (Pvt) Ltd.), Antonella Corleone (Agrumaria Corleone S.p.A.), Michael Torre (FD Copeland & Sons Ltd.), Alain Frix (Lyondell Flavours & Fragrances) and Jorge Miralles (Solutex—Soluciones Extractivas Alimentarias, S.L.); back row: George Paul (Synthite Industries Ltd.), Jonpaul Howarth (Australian Botanical Products Pty.), Kim Bleimann (Berjé), Katrina Neale (Global Essence), Colin Ringleib (Pepsi-Cola Co.) and Pamela Kirby Johnson (IFEAT Secretariat).*

hikes as a result of this decline led to use of synthetic alternatives by industry. Today, France, Germany, Spain, England, Switzerland and the United States are the main consumers of rosemary oil. There are about 12 main rosemary oil producers in the country. Myrtle oil production totals 2–3 metric tons/year. In 2008/2009, the price went up as farmers quit to produce other crops or quit farming for better-paying jobs. Belkhodja noted that there are possibilities to grow geranium, rose centifolia, *Rosa canina*, *Juniperus oxycedrus* and other new crops, but challenges remain, including decreasing arable land and rudimentary production techniques such as inefficient iron stills.

## Turkey

Hasan Ali Kinaci (Sebat Ticaret) discussed rose production in Turkey (rose oil: 1.0–1.5 tonnes/year; rose concrete: up to 8.0 tonnes/year) and compared its operations to those in Bulgaria. In Turkey, only small farms produce roses, meaning there are perhaps 10,000 individual growers. Brokers then represent big purchasers, including Sebat-United, Gulbirlilik, Robertet, Ecartin-IFF and Biolandes. Total rose oil production in Turkey in 2009 was: 1,145 kg; rose concrete: 4,240 kg. Both totals were negatively impacted due to a spring frost. About 51% of Turkish-produced material is exported to France, followed by Germany. Production and pricing of the Turkish materials are generally unstable in Turkish materials, said Kinaci, and tends to center on rose concrete production more than rose oil production. Generally, production is threatened by the financial issues surrounding a major producer, in addition to the large-scale use of pesticides. Bulgaria, meanwhile, tends to have larger fields. The biggest difference between the two countries' oils is their citronellol levels. Bulgaria has had stable production in recent years, and focuses more on rose oil production than concrete. That producing country has had generally declining prices in last three years, but it faces labor issues with seasonal rose pickers and suffers aging fields up to 15 years old.



*The opening night of IFEAT celebrated a record attendance of 800-plus delegates.*



*Dancers entertained attendees during the annual dinner.*



*George Paul (Synthite Industries Ltd.), Laure Moutet-Manheimer (Kerry), Stephen Manheimer (Kerry) and Jordi Calonge (Ernesto Ventos S.A.).*





Valerie Chabrier and Pierre Bonnefoi (Albert Vieille SAS).



Jack Knights (Jack Knights Consultancy) and P&F magazine natural products editor Brian Lawrence.



Stephen Manheimer (Kerry), Alain Frix (Lyondell Flavours & Fragrances) and Laure Moutet (Kerry).



Ramon Bordas (Destilaciones Bordas Chinchurreta).



Susan Gill, Martin Gill, Sally Gill and Henry Gill (all Demonchy).



Wladyslaw Brud (Pollena-Aroma).



Steve Tanner (Arylessence).



Richard Niemirowski (Westlake Fine Chemicals) and Patrice Blaizot (Parfum Cosmetic World).



Celine Roche (Mane) and Debbie Mockford (Global Essence UK).

Kinaci added that Turkey also produces/year:

- Citrus oils: ~0.4 tonnes
- Aniseed oil: 0.2 tonnes
- Coriander seed oil: 0.20–0.25 tonnes
- Cumin seed oil: 3.5 tonnes
- Oregano leaf oil (wild/cultivated): 15–20 tonnes
- Sage leaf oil (wild/cultivated): 1.5–2.5 tonnes
- Laurel leaf oil (wild): 2.0–2.5 tonnes
- Myrtle oil (wild): 0.2–0.25 tonnes
- Rosemary oil (wild): 0.50–0.75 tonnes
- Fennel seed oil (wild): 0.25–0.35 tonnes

### A Silicon Valley for the French F&F Industry?

Han-Paul Bodifée (Prodarom) switched the focus to Europe and wider questions of innovations during his presentation of Pôle de Compétitivité Parfums Arômes Senteurs Saveurs ([www.pole-pass.fr](http://www.pole-pass.fr)), a competitive cluster for the flavor and fragrance industry in France. The cluster region—encompassing 550 companies representing 55% of the national production of cosmetics and perfume, and 32 public research labs—seeks to boost collaborative projects for innovation, growth and employment in the selected area. Participants, Bodifée noted, include companies such as Mane, Robertet, L'Occitane, Cargill, Charabot and Payan Bertrand, and academic

institutions such as Université de Provence, Université Nice and Faculté de Pharmacie de Marseille. The move seeks to innovate products such as cosmetics, detergents, toiletries and foods.

The undertaking is governed by a 10-member board, a scientific council and a training commission, which seek to improve sourcing (new raw materials, production methods), ingredient production (identification and characterization, manufacturing processes, extraction) and end products (safety, efficiency, flavor functionality). The vision of the program is to expand cooperation to the wider Mediterranean region, Bodifée explained.

Each project will involve two private companies and one academic partner. Currently, there are 128 member institutions and 26 R&D projects—the majority focus on natural materials, in addition to one analytical chemistry platform—that have been vetted for technological and economic value. The staff involved in the active projects include 300 researchers, 96 companies, 5,900 employees, nine university training courses.

### Flavors: What is Natural?

Jack Knights (Jack Knights Consultancy) devoted his presentation to untangling the language of several sets of flavor regulations, including the UK Food Standards

Agency Consultation 2007; US Federal Register, 21.CFR. Chapter 1, Parts 101.22(a).1; IOFI Code of Practice for the Flavour Industry, Part VI; 88/388/EEC; and EC No. 1334/2008. Considering the most recent changes to EU legislation, particularly the changes made regarding the elimination of “nature-identical” designations, Knights said he believes some 65% of flavors currently sold in the European Union will have to be reformulated, but that 50% cannot be reformulated as-is because the necessary natural ingredients are not readily available to formulators. “What is natural?” asked Knights. The reality, he said, is that industry, regulators and other stakeholders will never agree on a definition for natural due to the plethora of vested interests. This is particularly important as consumers see natural products as safer and healthier than synthetic counterparts—despite what the science says. Yet natural materials are generally more expensive than synthetics and are poorly chemically defined. In examining the pitfalls of defining the “natural” discrepancy among regions, Knights began with the UK Food Standards Agency Consultation recommended criteria for the use of the term “natural”:

“Essentially the product is comprised of natural ingredients, e.g. ingredients by nature, not the work of man or interfered with by man.”

“This recommendation, if applied strictly, would only permit food ingredients which have not been hybridized,” said Knights. “Therefore almost all current food ingredients would be regarded as not natural. Exceptions may be fungi, fish and wild animals, although some varieties of all of these have been selectively bred.”

The UK Food Standards Agency Consultation recommended criteria for the use of the term “natural” continued:

“Certain permitted additives and flavourings may be described as natural, in conformity with their own legislation. Other ingredients which have been produced using physical processes, such as solvent extraction, should not be considered as natural ... Compound foods should not be described directly or by implication as ‘natural,’ but it is acceptable to describe such foods as ‘made from natural ingredients’ if all the ingredients including additives and flavourings meet the ‘natural’ criteria.”<sup>a</sup>

Meanwhile, in the US Federal Register, 21.CFR. Chapter 1, Parts 101.22(a).1, natural is described thusly:

The term natural flavor or natural flavoring means the essential oil, oleoresin, essence or extractive, protein hydrolysate, distillate, or any product of roasting, heating or enzymolysis, which contains the flavoring constituents derived from a spice, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, seafood, poultry, eggs, dairy products, or fermentation products thereof, whose significant function in food is flavoring rather than



Sasko Tasev (Gulcicek International Fragrance Co.), Erol Meshulam (Gulcicek International Fragrance Co.), Ashok Kumar Jallan (Aravali Essential Oils & Fragrances) and Gul Zerrin Utandi (Gulcicek International Fragrance Co.).



Genevieve Brown (Dominion Essential Oils), Patrice Blaiot (Parfum Cosmetic World), Paige Crist (P&F magazine), Loren Michael (Chemlumina), Frank Sauvan (Firmenich) and Sophia Brown.



Sandeep Tekriwal (PT. Van Aroma), Jeb Gleason-Allured (P&F magazine), Ravi Sanganeria (Ultra International Ltd.) and Prasenjit Mazumdar (Ultra International Ltd.).



Gillian Bleimann (Berjé), Alessandra Tusa, Kim Bleimann (Berjé) and Antonella Corleone (Agrumaria Corleone).

<sup>a</sup>Underlined passages included for editorial emphasis.





*Soraya Ben Djenana (Carthago Essences).*



*Garrick Boucard (Texarome), Claude Bruell and Fernand Sirvent (Berjé).*



*Steve Tanner (Arylessence) and Linda Tanner.*



*Sergey Ageev and Xavier Mondard (both Komiarome).*



*Sergio Gallucci (Natura Inovacao Tecnologia Ltda.) and Michael O'Laughlin (O'Laughlin Industries Co., Ltd.).*



*Kimberly Palacios, Kirsten Davis and Courtney Jakubecy (all LA Champon).*



*Moustafa Hashem (Hashem Brothers for Essential Oils & Aromatic Products).*



*Chris English (Bontoux Inc.), Pia Henzi (MCI Miritz Citrus Ingredients) and James Gates (Lebermuth).*



*Francis Thibaudreau and Julien Maubert (both Robertet).*

nutritional. Natural flavors include the natural essence or extractives obtained from plants listed in 182.10, 182.20, 182.40, and 182.50 and part 184 of this chapter, and the substances listed in 172.510 of this chapter.

“This definition includes process and smoke flavors as natural, providing the source materials are natural,” Knights explained.

The US flavor definitions in US Federal Register, 21.CFR.Chapter 1, Parts 101.22(a).1 continue:

The term artificial flavor or artificial flavoring means any substance, the function of which is to impart flavor, which is not derived from a spice, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, fish, poultry, eggs, dairy products, or fermentation products thereof. Artificial flavor includes the substances listed in 172.515(b) and 182.60 of this chapter except where these are derived from natural sources.

“There is no further definition or explanation of the implications of the final phrase ‘except where these are derived from natural sources,’” says Knights. “Its interpretation can be very wide and is said to include the acceptance that if all the starting materials are natural then the final product will be natural.” Perhaps, he wondered, petroleum could make the cut?

In reviewing the IOFI Code of Practice for the Flavour Industry, Part VI, Knights highlighted the following:

Natural aromatic raw materials are used as a source for natural flavor concentrates and natural flavouring substances are the essential oils, oleoresins, extractives, distillates, or products of roasting, heating or enzymatic transformations of spices, fruit, root, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, seafood, poultry, eggs and other animal products, dairy, products, or fermentation products thereof. Products of petrochemical derivation are excluded ... All physical processes may be used for the isolation of natural flavor concentrates or natural





Catherine Crowley (Eucaforest (Pty) Ltd.).



Speaker Jamal Chahboun (SarI Phytotagante).



Gaelle Jacobsen (Unilever) and Dorothea Bodnar (Dreidoppel), top students in IFEAT's fragrance and flavor training programs, respectively.



Hasan Ali Kinaci (Sebat Ticaret) discussed rose oil production in Turkey.



Csaba Fodor (Silvestris & Szilas Ltd.) and Xavier Monard (Komirome).



Panelists Chedly Belkhodja (Les Vergers De Tunisie), Mohammed Hmamouchi (Arab Federation), Hussein Fakhry (A. Fakhry & Co.), Maria Novoa-Magrini (IFF) and Kim Bleimann (Berjé).



Pamela Kirby Johnson (IFEAT), Alastair Hitchen (Lionel Hitchen Essential Oils Ltd.), Michael Boudjouk (Medallion International Inc.) and Tony Curtis (University of Plymouth).



Steve Tanner (Arylessence), Steve Smith (F D Copeland & Sons Ltd.), Jack Knights (Jack Knights Consultancy), Remy Scarpa (M.P.E.) and Jan Demyttenaere (EFFA).

flavouring substances, pH adjustment may be used for the isolation of acidic and basic materials.

Regarding biochemical processes, the Code says:

The carrier system may be aqueous or non-aqueous. Natural substrates can be used as carriers. Non-natural carriers can only be used if they do not react irreversibly and do not serve as a substrate. Carriers may remain in the final mixture provided that they are permitted as carrier solvents for natural flavourings.

“This guideline does not explain the status of a product which is made by a complying biochemical procedure,” said Knights, “which, if made by a chemical method, would be classified as artificial.” For example: ethyl vanillin.

Knights then moved on to the EEC Council Directive 88/388/EECC:

The word ‘natural’ or any other word having substantially the same meaning may be used only for flavourings in which the flavouring component contains exclusively flavouring preparations and/or natural flavouring substances.

“This precludes process and smoke flavourings,” said Knights, “which may not be classified as natural or used as ingredients in natural flavourings in the EU.”

Knights highlighted the following in the EEC Council Directive 88/388/EEC section on natural flavorings labeling:

If the sales description of the flavouring contains a reference to a foodstuff or flavouring source, the word ‘natural’ or any other word having substantially the same meaning, may not be used unless the flavouring component has been isolated by appropriate physical,





Steve Smith (F D Copeland & Sons Ltd.).



Han-Paul Bodifée (Prodarom).



A procession featured during the closing banquet.



Steven Pearce (Omega Ingredients Ltd.), Jack Knights (Jack Knights Consultancy) and Jeb Gleason-Allured (P&F magazine).



Stephen Pisano (Citrus & Allied Essences), Rovena Raymo (Simone Gatto) and Jeremiah O'Regan (Cedarome Canada Inc.).



Cornelis van Beuzekom (Lansdowne Aromatics), Paige Crist (P&F Magazine) and Stuart Alexander (Lansdowne Aromatics).



Valerie Boucard and Kevin Poehlmann (George Uhe Co. Inc.).



Performers featured prominently during the closing banquet at the Beldi Country Club.

enzymatic or microbiological processes or traditional food preparation processes solely or almost solely from the foodstuff or flavouring source concerned.

“Traditional food preparation processes” includes actions such as chopping; drying; heating/cooking/baking/ frying up to 240°C at atmospheric pressure, and pressure cooking up to 120°C; grinding; microbiological processes; peeling; pressing; maceration; extraction per 88/344/EEC; distillation/rectification; and cooling.

“By agreement with EU Commission, this is satisfied by 90% from the named source, with no restrictions on the other 10% other than it must be natural,” said Knights.

He continued by examining EC No. 1334/2008, which will become fully enacted by Jan. 20, 2011:

Flavouring preparation (Chapter 1 Article 3.2 (d)) shall mean a product other than a flavouring substance obtained from: (i) food, by appropriate physical, enzymatic or microbiological processes, either in the raw state of the material or after processing for human consumption by one or more of the traditional food preparation processes listed in Annex II. and/or (ii) Material of vegetable, animal or microbiological origin, other than food, by appropriate physical enzymatic or microbiological processes, the material being taken as such or prepared by one or more of the traditional food preparation processes listed in Annex II.

The specific requirements for the use of the term “natural” are detailed in Chapter IV, Labeling Article 16:



1. If the term 'natural' is used to describe a flavouring in the sales description the provisions of paragraphs 2 to 6 of this Article shall apply.
2. The term 'natural' for the description of a flavouring may only be used if the flavouring component comprises only flavouring preparations and/or natural flavouring substances.
3. The term 'natural flavouring substance(s)' may only be used for flavourings in which the flavouring component contains exclusively natural flavouring substances.
4. The term 'natural' may only be used in combination with a reference to a food, food category or a vegetable or animal flavouring source if the flavouring component has been obtained exclusively or by at least 95% by w/w/ from the source material referred to.

The use parameters for the 5% are outlined in the EC No. 1334/2008 preamble to the Regulation—the “whereas” section, as Knights put it—in paragraph (26):

As the use of flavourings should not mislead the consumer, the other maximum 5% can only be used for standardisation or to give a, for example, more fresh, pungent, ripe, or green note to the flavouring.

Knights further quoted from the text:

5. “Natural <<food or source>> flavouring with other natural flavourings” may only be used if the flavouring component is partially derived from the source material referred to, the flavor of which can easily be recognized.

“This category appears to include flavorings with greater than 5% (w/w) of non-titled source material,” Knights pointed out, “but does not specify a quantitative content of titled source material, only that its flavor can be easily recognized. For a concentrated fruit juice this may be as high as 80%, whereas for onion oil less than 0.1% may suffice. This definition is entirely different from with other natural flavors/WONF used in the United States.”

The regulation continues:

The term “natural flavoring” may only be used if the flavouring component is derived from different source materials and where a reference to the source materials would not reflect their flavor or taste.

Knights pointed out that the text has not accounted for flavor types such as barbecue and toffee, which are natural but not derived from the named ingredients (i.e. barbecue flavoring is not derived from barbecues).

In considering ingredients, Knights noted that EC No. 1334/2008 specifies that only flavoring substances contained in the Community (positive) List—now known as the Union List—will be permitted in flavors. The list is set for approval by Dec. 31, 2010.

“The Union List does not differentiate between natural and non-natural substances,” says Knights. “The register,



Remy Scarpa (M.P.E.) and Jack Knights (Jack Knights Consultancy).



Jalal Charaf (Les Aromes du Maroc) spoke on Argan oil. Seated is Antonella Corleone (Agrumaria Corleone).



Ravi Sanganeria (Ultra International Ltd.) introduced details of the IFEAT study tour of Java Island, Indonesia, being held in July 2011. The trip will provide an on-site chance to explore the production areas featuring patchouli, nutmeg, clove, vetiver, massoia, kaffir lime, sandalwood and more. Participants will gain knowledge on production, trading and research regarding essential oils, extracts and derivatives, in addition to historical and cultural insights. Restricted to employees of IFEAT member companies, additional trip details are available at [www.ifeat.org](http://www.ifeat.org).



Chris English (Bontoux), Celine Roche (Mane) and Laurent LeGuernec (IFF).





from which the positive list will be derived, contains all the substances in current use, but a significant number of them, many of which are specific flavor character compounds, still await evaluation by EFSA before they may be added to the List," as noted later on by Jan Demyttenaere (European Flavour Association/EFFA).

Knights then quoted from the EC No. 1334/2008 designation of flavorings in the list of ingredients of food:

1. Flavourings shall be designated by the terms "flavourings" or a more specific name or description "smoke flavourings" if the flavouring component contains smoke flavourings and imparts a smoky flavor to food.

A flavoring containing flavorings and smoke flavorings would need to mention both on the food ingredients list.

The regulation continues:

2. The term "natural" for the description of flavourings shall be used in accordance with Article 16 of the proposed Flavouring Regulation.

Demyttenaere then discussed how EC No. 1334/2008, as a regulation, harmonizes EU law across member states. The new regulations, part of the Food Improvement Agents Package, add definitions not included in 88/388/EC, including flavor precursor (food/non-food), other flavouring, food ingredient with flavouring properties, and source material (food/non-food).

Under these regulations, "Flavourings" are not intended to be consumed as such, but are added to foods to impart or modify odor and/or taste."

"Flavouring substance" is a defined chemical substance with flavoring properties; no distinction is made between nature-identical and artificial flavoring substances. Meanwhile, "identified in nature" means "identified in materials of plant, animal, microbiological or mineral origin and/or identified in food in the raw state or processed or partly processed for human consumption and meeting the criteria for the validity of identifications in nature," as further described in IOFI Information Letter 1333. "Requirements concerning the processes allowed for natural flavoring substances and flavoring preparations are specified," said Demyttenaere. Process flavorings are named "thermal process flavourings"; production condi-

tions and maximum levels for some substances are set, and a distinction has been established between source materials considered "food" and those considered "non-food," i.e. "source material other than food."

Substances that cannot be added "as such" to food include: agaric acid, aloin, capsaicin, coumarin, pulegone, hypericine,  $\beta$ -asarone, hydrocyanic acid, menthofuran, quassin, safrole, teucrin A,  $\alpha$ - and  $\beta$ -thujone, estragole, and methyl eugenol. For estragole, methyleugenol and safrole, the maximum levels will not apply "where a compound food contains no added flavorings and the only food ingredients with flavoring properties which have been added are fresh, dried, or frozen herbs and spices."



*Dinner presented during banquet night.*

Demyttenaere then presented a chart of substances in use in European Union today. This so-called "EU-Register," or inventory,

includes about 2,500 flavoring substances "authorized and legally introduced on the EU market for many years with a history of safe use," said Demyttenaere. Most of these materials have also been reviewed and recognized as safe by other global assessment and regulatory bodies such as JECFA (Joint FAO/WHO Expert Committee on Food Additives), the US FDA/FEMA GRAS, and the Council of Europe. Of the eventual 2,618 flavoring substances anticipated to be on the final Union List, 79% (2,077) have had their evaluations completed and 21% (541) have not had evaluations completed.

## Regulatory Outlook

Steve Tanner (Arylessence) presented a talk on future challenges beyond flavor regulations, including the continued questioning of ingredient safety by well-funded NGOs and legislators, the push for product-specific regulations, and general disrespect for confidential business information (CBI).

Specifically, he cited "systematic attacks on the fragrance and flavor industry" that tout the presence of "secret" chemicals in products, a lack of accessible data, a distrust of voluntary industry self regulation, and a push for sustainable ingredients. NGOs, said Tanner, are using new, effective tactics: coordinating with legislators, publishing pseudo-scientific studies attacking products and claiming a right to breach CBI on behalf of the public.

Overall, he added, there is growing distrust of industry science, and a move toward product-specific safety standards, increased regulation, and legislative supervision of the food, beverage, consumer product, personal care and chemical industries.

As a counter-measure, Tanner urged all IFEAT attendees to maintain membership and remain active in industry organizations in support of a united voice.

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