



Organoleptic Characteristics of Flavor Materials

Gerard Mosciano

Gerard Mosciano is joined by Judith Michalski, chief flavorist, Edlong Flavors; Carl Holmgren, consulting flavor chemist; William Jaggard, Bell Flavors; and Douglas Young, principal flavorist, Symrise, in the organoleptic evaluations presented here. Natural occurrence information is from Leffingwell & Associates.

Address correspondence to Gerard Mosciano, c/o *Perfumer & Flavorist* magazine, 336 Gundersen Drive, Carol Stream, IL 60188-2403.

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This May, the Chemical Sources Association (CSA) held its annual meeting and roundtable, in conjunction with the Society of Flavor Chemists' 369th meeting in New Jersey.

The following companies presented flavor ingredients: Advanced Biotech, Biolandes Inc., Cargill Supply Solutions, Danisco Flavor and Fragrance Ingredients, Del-Val Food Ingredients, Frutarom USA Inc., Global Essence Inc., International Flavors and Fragrances Inc., Lebermuth, Oxford Chemicals Ltd./Charkit Chemicals, MCI Miritz Citrus Ingredients LLC, A.M. Todd Co./Moore Ingredients, O'Laughlin Industries, Polarome International, SAFC Flavor and Fragrance, Thwiates Inc., Vigon International/Givaudan, Virginia Dare Inc., Wen International, and more.

The approximate 150 attendees were able to organoleptically evaluate a wide range of new natural and organic botanical extracts, some of the new GRAS 23 materials, and some new natural versions of previously GRAS-approved materials.

Below are some of our initial evaluations. Subsequent articles will include more of the materials shown at this round table.

Evaluations

Acetoin (synonym: Acetyl Methyl Carbinol)

Supplier: O'Laughlin Industries Inc.
FEMA# 2008, CAS# 513-86-0,
Nature identical

Natural occurrence: Apple, butter, cheddar cheese, coffee, cocoa, corn, honey and wine.



Odor: @ 1.0%. Slightly sour cultured dairylike, buttery and slightly ketonic with a musty nuance.

Taste: @ 10–50 PPM. Milky, mild buttery with a slight creamy mouthfeel and an oily texture.

Possible applications: Dairy flavors, fruits for ripe notes, wines, caramel, butterscotch, meats, chocolate, milk flavors, butter and cheese.

► **O'Laughlin Industries Inc.;** *tel:* 1-908-862-0095; *email:* olinds1@ix.netcom.com

Chickory Extract

Supplier: A.M. Todd Co./Moore Ingredients

Natural and organic, NOP/EU

Odor: Neat. Woody, roasted and slightly burnt coffeelike with beany, earthy and savory nuances.

Taste: @ 0.1%. Woody, beany nutty, ashy coffee with earthy and slightly bitter astringency.

Possible applications: Nut nuances for walnut, coffee, cocoa, brown savory nuances for marinated and sauces.

► **A.M. Todd Co.;** *tel:* 1-269-343-2603; *www.amtodd.com*



Dimethyl Disulfide

Supplier: Oxford Chemicals Ltd.
FEMA# 3536, CAS# 210-871-0,
Nature identical

Natural occurrence: Cabbage, cauliflower, cooked beef, garlic, leek, pineapple, radish, rutabaga, strawberry and yogurt.

Odor: @ 1.0%. Sulfurous cooked cauliflower, cabbage and brussels sprouts, slightly metallic with savory and tropical fruit nuances.



Taste: @ 1.0 PPM. Sulfurous cooked vegetative cauliflower, cabbage, seared meaty with canned pineapple and tropical passion fruitlike notes.

Possible applications: Cabbage rolls, kimchi and other vegetative nuances, pineapple, passion fruit and other tropical fruits.

► **Oxford Chemicals Ltd.;** *tel:* 44-(0)-1429-863555;
www.oxfordchemicals.com

Hazelnut CO₂ Extract

Supplier: Cargill Flavor Systems
Natural

Odor: @ 1.0%. Nutty, oily, roasted hazelnut and peanut, sweet, creamy and fresh with a slight sulfurous nuance.

Taste: @ 10 PPM. Roasted hazelnut and peanut, lingering musty with oily and fatty nuances.

Possible applications: Macadamia nut, hazelnut, chocolate combinations such as Nutella, spanish peanuts, flavors for coffee.

► **Cargill Flavor Systems;** *tel:* 1-513-539-7373;
www.cargillflavorsystems.com



3,4-Hexanedione (synonym: Dipropionyl)

Supplier: O'Laughlin Industries Inc.
FEMA# 3168, CAS# 44437-51-8, Nature identical
Natural occurrence: Cauliflower, coffee.

Odor: @ 1.0%. Warm cooked, slightly caramel brown and buttery with corn chip and bready nuances.

Taste: @ 5–10 PPM. Cooked, slightly caramel browned buttery with an oily mouthfeel.

Possible applications: Dairy nuances, drawn butter, caramel, butterscotch, butter and coffee nuances.

► **O'Laughlin Industries Inc.;**
tel: 1-908-862-0095;
email: olinds1@ix.netcom.com



Lemon Water Phase

Supplier: MCI Miritz
Citrus Ingredients LLC
Natural

Odor: Neat. Intense fresh lemon/lime citral-like with a juicy

lemonadelike terpy nuance.

Taste: @ 0.05%. Intense lemonade, lemon citral-like with peely lime nuances.

Possible applications: Lemon and lime beverages, citrus punches.

► **MCI Miritz Citrus Ingredients LLC;** *tel:* 1-845-988-9920;
www.miritz.de

Menthyl 3-Hydroxy Butyrate

Supplier: Oxford Chemicals Ltd.

FEMA# 4308, CAS# 108766-16-1, Artificial

Odor: @ 1.0%. Slightly sweet mentholic with a carvone nuance.

Taste: @ 25 PPM. No real taste but imparts a good mouthfeel and a coolness that builds on the tongue. It also imparts a slight effervescent tingle.

Possible applications: Fresh notes for fruits, tropical nuances, oral care products, pharmaceuticals, bitter-ness blockers, mint flavors.

► **Oxford Chemicals Ltd.;** *tel:* 44-(0)-1429-863555;
www.oxfordchemicals.com

2-Nonanol

Supplier: Cargill Flavor Systems

FEMA# 3315, CAS# 628-99-9, Nature identical

Natural occurrence: Apple, banana, cheddar cheese, clove, coconut, corn, orange, rum, strawberry and whiskey.

Odor: @ 1.0%. Waxy, green musty and creamy with an aldehydic soapy and fatty nuance.

Taste: @ 1–5 PPM. Waxy, fruity, cheesy, green fatty with an oily mouthfeel.

Possible applications: Blue cheese, mushroom, coconut, cream flavors, cantaloupe, honeydew melon, cucumber and chicken.

► **Cargill Flavor Systems;** *tel:* 1-513-539-7373;
www.cargillflavorsystems.com

Pink Grapefruit Oil

Supplier: The Lebermuth Co. Inc.
Natural and organic

Odor: @ 1.0%. Sweet citrus, grapefruit and orange with woody and juicy notes.

Taste: @ 10 PPM. Grapefruit, citrus orange with juicy tangerine and terpy nuances.

Possible applications: Citrus flavors, grapefruit juices, lemonade and mandarin nuances.

► **The Lebermuth Co. Inc.;** *tel:* 1-574-259-7000;
www.lebermuth.com



Rooibos Extract

Supplier: Cargill Flavor Systems
Natural

Odor: Neat. Musty tealike, astringent with a grassy barnyardlike hay nuance.

Taste: @ 0.1%. Leafy, musty and woody, slightly astringent with a haylike barnyard character and a slight herbal nuance.

Possible applications: Tea and mate beverages, vanilla nuances, herbal concoctions.

► **Cargill Flavor Systems;** *tel:* 1-513-539-7373;
www.cargillflavorsystems.com

γ-Valerolactone

Supplier: WEN International Inc.
FEMA# 3103, CAS# 203-569-5,
Natural

Natural occurrence: Cocoa, coffee, honey, peach, Virginia tobacco and wheat bread.

Odor: @ 1.0%. Creamy coumarin, cherry, almond nutty with soapy, spicy and coconut nuances.



Taste: @ 10 PPM. Chemical-like with coumarin and nutty nuances reminiscent of cashew, almond and peanut.

Possible applications: Hay, coumarin substitutes, coconut, tobacco, vanilla, cherry, almond and cashew.

► **WEN International Inc.;** *tel:* 1-845-354-1773;
www.weninternational.com

Vanilla Concentrate FR Bourbon Solid Extract

Supplier: Frutarom
Natural

Odor: @ 1.0%. Sweet, woody beany vanilla with a slight burnt balsamic nuance.



Taste: @ 10 PPM. Creamy vanilla, sweet, beany with a woody background note.

Possible applications: Baked applications, confections, general vanilla applications.

► **Frutarom;** *tel:* 1-201-861-9500; *www.frutarom.com*

Vanilla 10 X Pure Extract

Supplier: Virginia Dare
Organic

Odor: @ 1.0%. Sweet vanilla, creamy, woody and beany with balsamic and coumarinic nuances.

Taste: @ 10 PPM with 5% sugar. Sweet beany vanilla, woody, brown with nutty and creamy nuances.

Possible applications: General vanilla applications, baked goods, cola confections, beverages, cordials and cereal flavors.

► **Virginia Dare;** *tel:* 1-718-788-1776;
www.virginiadare.com

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