On Location: SFC, CSA Meeting at Monell

Meeting highlights sensory research and ingredients

The joint meeting of the Society of Flavor Chemists (SFC) and Chemical Sources Association (CSA), held in partnership with Philadelphia's Monell Center, featured ingredient presentations and insights from Monell-affiliated researchers on recent research on the mechanisms and functions of taste and smell.

Abigail Mandel discussed the differences in the way people perceive food textures, such as starchiness, based on the presence of the oral enzyme salivary amylase. Texture, a key component of food perception, is shaped by the variability of this enzyme, and can drive liking for starchy and starch-thickened foods, which can account for up to 60% of human caloric intake. In addition, elevated levels of salivary amylase break down starchy foods more quickly, leading to high levels of glucose after eating—a key factor in the development of metabolic diseases such as diabetes. Meanwhile, Paul Wise spoke about the ways in which menthol can enhance or reduce sensitivity to trigeminal stimuli such as trigeminal inputs—specifically nasal irritation. Next, Bruce Bryant presented a talk about the relationship between cool-sensitive receptors and the perception of "bite" from beverage carbonation, concluding that temperature can be considered a key factor in carbonated beverage flavor perception. Finally, Alison Ventura discussed the relationship among infant formula type (cow's milk, soy-based or protein hydrolysate-based), infant weight gain and risk of disease, particularly obesity and diabetes. Breast-fed babies gain less weight than babies fed formula, but researchers wanted to know if this was true for all formula bases. In the study, Ventura explained that infants fed protein hydrolysate-based formula gained less weight than those fed cow's milk. (Both formulas contained identical calories.) This could be the result of the protein's ability to trigger satiation. The weight gain of the babies fed hydrolysate-based formula was in line with breast-fed infants. According to Monell, "Future studies will utilize measures of energy metabolism and expenditure to examine how the individual formulas influence growth, and how each differs from breastfeeding."

Ingredients Displayed

Bedoukian Research's Izzy Heller introduced several ingredients during the CSA portion of the day. ***cis-3-Nonenyl acetate*** (FEMA# 4553, CAS# 13049-88-2, pear acetate) was displayed in a pear flavor at 2 ppm where it added naturalness. The ingredient has a fleshy, pear odor and is useful in fruity compositions from trace level to 40 ppm. ***Decen-1-yl cyclopentanone*** (FEMA# 3829, CAS# 68133-79-9, apritone) was displayed at 2 ppm in a cherry flavor where it added naturalness. The ingredient has fuzzy peach skin, bananalike, ripe fleshy apricot, jasmine, sugary and cooked fruit facets. At levels up to 10 ppm, it is suggested for use in jammy and flesh notes in peach, apricot and similar fruit flavors. ***cis-3-Hexen-1-al*** (50% in triacetin; FEMA# 2561, CAS# 6789-80-6) was very strong, showing up in a raspberry flavor at 0.04 ppm, imparting a green, powerful, fresh skin, seedy impression. The material, which also has applelike nuances, is recommended for use up to 1 ppm in green notes for fruit and vegetable complexes.

Next, Jerry Horner of Horner International provided the "good news and bad news" on ***cocoa extracts***. The flavor of cocoa, which he called both healthy and popular, has benefited from the source material's phenolic phytochemical level, which exceeds that of red wine or green and black tea. Cocoa has some indications for healthy blood pressure and for counteracting/preventing cardiovascular disease, he added. A victim of its own popularity, Horner explained that cocoa prices have consistently climbed over the years. In addition, cocoa powder is largely insoluble and will destabilize milk proteins. Meanwhile, cocoa powder is hydroscopic, which can render the product hard and sticky. Extracts, on the other hand, tend to be heat- and time-stable and present a good source of Maillard reactions. Extracts comprise flavor compounds that won't oxidize. The materials can be sourced in several formats, including powders and alcoholic tinctures. The range of flavors is fairly broad.*

Horner noted that the extracts presented at the meeting were produced with a "proprietary" extraction process. He explained that supercritical CO_2 was not used, as it tends to produce extracts that are not as full or rounded. The process is able to produce colorless products, though those were not shown. The ***premium cocoa extract 3009*** (*Theobroma cacao*), presented at 1.12% in a demo pudding, had a rich, sweet, dark brown cocoa character. The ***premium cocoa extract 3019*** (*T. cacao*) had an intense, medium dark cocoa note. Other extracts—***3069*** and ***3003***—reportedly feature smooth/sweet and mild roasted notes, respectively.

For future meetings, visit www.perfumerflavorist.com/events/calendar.

**C Counet, C Ouwerx, D Rosoux and S Collin, Relationship between Procyanidin and Flavor Contents of Cocoa Liquors from Different Origins.* J Agric Food Chem, *52, 6243–6249 (2004)*