

Sensory expert round table

A Taste of Things to Come

Emerging holistic strategies in gathering and responding to flavor/food trends



Every day, new and novel flavors appear on store shelves. (Black Pepper Jack Doritos?) Where do these ideas come from? How are they honed from a concept or trend to a finished product? *P&F* recently sat down with several key Givaudan R&D, sensory and marketing personnel to find out how this leading company develops successful, forward-looking flavors for kids and beyond. What we learned is that tracking trends means getting into the restaurants, asking sensory panelists questions using vocabulary to which they can relate, tracking phenomena beyond just the flavor/food universe (lifestyle trends, changes in family structures, spending power paradigms, etc.) and sometimes starting your very own trend.

P&F: Can you generally describe the various ways in which Givaudan tracks flavor trends and preferences?

Wuest-Murphy: We lay the foundation with a broad array of secondary resources to look at demographic trends, consumer trends, product trends and flavor trends. We've also got our own internal information about flavor trends and what we're seeing with our customers. After setting the foundation with secondary information, we move on to primary research — either the sensory research that Caryn Crawford's sensory area conducts or other kinds of primary research, such as focus groups or concept tests. We've done work with a broad array of different kinds of groups, such as kids and Hispanics.

Moving on to less traditional forms of primary research, we have two activities that we undertake that are unique to Givaudan. One of them is called TasteTrek,^{*} where we go out to places around the world and discover new flavors derived from plants and botanicals out in the wild. The other is our TrendTreks program,

which gives us an opportunity to immerse ourselves in whatever segment/phenomenon we're studying. For example, we've done TrendTreks where we've studied different nationalities — Hispanic culture, for example — in depth. We also have done TrendTreks where we have looked more closely at health and wellness and indulgence. So, we're experiencing these things across a number of different venues — restaurants and retail stores, for example. The combination of all those things together is what helps us stay on top of where the industry is today and where it's going, as well as assists us in knowing what we need to do to stay out front.

When we were conducting the Hispanic research and doing the TrendTrek into the Hispanic segment, we went to cultural centers. We sat and talked to groups of individuals about lifestyle trends. It wasn't just all about looking at food choices, but, rather, really trying to understand more broadly what is involved in a trend.

Berry: We have a network of experts that we rely on and talk to for insights on trends. We have a chef council that we talk to about the restaurant industry. With the alcohol segment we talk to bartenders and get information from them about what's happening in the alcohol business. We rely very closely on people within various industries who can provide their

^{*}TasteTrek is a Givaudan trademark.

insights and expertise based on their lines of work.

P&F: Specifically with kids, what trends are emerging in foods/flavors?

Berry: Kids are becoming much more sophisticated than ever before. They're exposed to a lot of different groups and a lot of ethnic diversity. They're very aspirational. They're looking beyond their peer groups into whatever the next group is. Parents also are becoming much more sophisticated. All these things are funneling down to create children who have much more sophisticated palates. Kids are looking not just for single flavors anymore; they're looking for much more complex flavor blends. They're looking for much more intense flavors. It's not just about extreme sour or extreme sweet — just more intense flavors in general. We're also seeing a lot more adult-type flavors making their way into kids' beverages and flavors. So we're seeing versions of piña colada and strawberry margarita in kids' flavors.

Crawford: We now frequently can put a more complex flavor together for children. In some cases, our customers don't use an indicative naming convention — it's more of a fantasy flavor concept. So, they would not put a children's product on the market that said "mango." The mango may be there and the children may respond well to it, but the customer may call it by a fantasy name — particularly with younger children.

Younger children want to stick with what's familiar, so you keep them with something like a fantasy name — something to which they can relate. You can introduce new flavors that way in a blend. And then the children get used to those and end up liking them later in life.

P&F: Are there any other trends you're seeing?

Wuest-Murphy: Clearly, health and wellness is a major trend affecting not just kids but the whole food and beverage industry. You're seeing a lot of flavors that play into health and wellness as it relates to kids, such as those that are known to have antioxidants — cranberries, blueberries, etc.; any flavors that are known to have broader health connotations.

Glancy: You have to weigh what the moms want against what the kids want in this health and wellness trend. Some of the work we've done with young females would indicate that they're particularly receptive to health and wellness.

Meet the Experts

Philana Berry

Marketing manager, beverages

"I focus specifically on carbonated drinks, sports drinks and the alcoholic beverage segment."



Caryn Crawford

Sensory scientist/sensory project manager

"I focus on sensory and consumer evaluations of our products."



Tracey Glancy

Vice president, dairy and sweet goods, marketing manager across business units

"I am in charge of the North American marketing group. We provide marketing support to all of Givaudan's business units for the region."



Diego Luzuriago

R&D creation tools

"I am in charge of the creation tools group in R&D. We develop new instrumentation and software to help our activities in flavor creation, applications, sensory evaluation and marketing."



Says Tracey Glancy: "Diego's group is developing tools that make us more efficient and get better information to do better flavor creation."

Mary Jo Wuest-Murphy

Market research/consumer insights manager

"My responsibilities revolve around tracking industry trends and conducting primary research at Givaudan."



Wuest-Murphy: It's a very broad phenomenon. Every company is going to be introducing a lot of health and wellness products this year. We're going to start seeing more healthy snacks for kids because parents are concerned about childhood obesity. Snack companies are looking for ways to make snacks healthier but still taste good.

Wuest-Murphy: This whole health and wellness trend is good for the flavor industry because these foods still have to taste good, even though they're taking out the bad stuff.

Crawford: No matter what the health and wellness benefit, to kids the most important thing is that it tastes good.

P&F: Do you see a difference between boys and girls in terms of preference/acceptance of certain flavors?

Crawford: Boys and girls definitely like different things and are attracted to different flavor profiles. If we're looking at what profiles boys like, they tend to go more toward sour green things. Girls go more toward reds, pinks and sweet things. Girls probably are more apt to go get a health and wellness-related beverage than boys are and accept the fact that it has some kind of off taste or aftertaste, whereas boys are not.

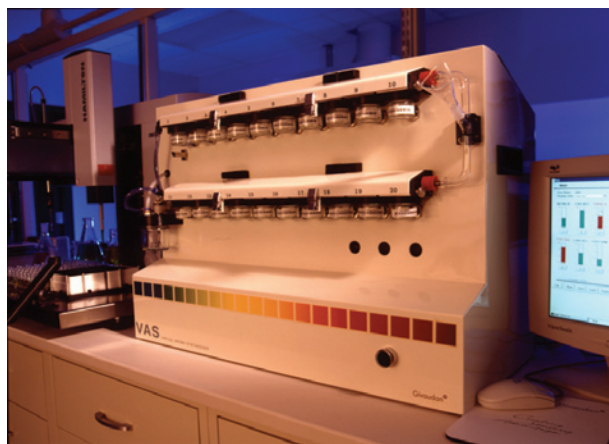
P&F: What influences kids' choices?

Wuest-Murphy: We know that advertising certainly does, because kids are expressing brand preferences at younger and younger ages. That is very definitely a big influence beyond parents and peers.

Berry: Still, parents and peers are a big influence — although maybe a little bit different than they used to be. I think it makes sense to separate the peer group into current peer group and aspirational peer group. Kids always are looking up to an older sibling and older kids to see what they want to emulate.

P&F: Givaudan has discussed several phenomena, including "Julia children" and the "Mini Me." Can you briefly explain each?

Berry: Those aren't phrases we coined. They're just phrases that we spoke to. "Julia children": Kids are spending a lot more time preparing and helping to prepare foods. They're mixing things up. And now you see a proliferation of children's cooking classes. Along with those things, you see a lot of toys that are baking related, preparation of food related. Kids are just getting much more involved than ever before in the preparation of food and the invention and creation of food through these in-home toys.



Givaudan's Virtual Aroma Synthesizer.

As far as the "Mini Mes," we are seeing a lot of manufacturers taking products that are traditionally adult-type products and funneling them down into kid sizes or kid versions of adult-type foods, beverages and electronics — across all categories.

P&F: Can you talk a little bit about the ways in which children express likes and dislikes?

Crawford: We've just undertaken a huge research project in which we developed a scale to collect those likes and dislikes. Kids definitely are different from adults, and we always have used a traditional scale that was developed for adults — the "dislike extremely" to "like extremely" scale. You try to use that with kids, and they don't relate to those words at all. They can't separate things into a nine-point scale. In the past, we've only gotten muddled information from children. We would get information back, and we couldn't always believe what it said. For the past two years, we have interviewed more than 2,000 children. We have developed a new scale that is at the correct length for children so that we can get the right amount of information from them. When kids are between 5 and maybe 7, it's hard to get more than just "I like it" or "I don't like it," or "yucky" and "yummy." They can't differentiate beyond that point at all. The older they get, the more they can differentiate, the more they can differentiate among a whole scale — "I like this a little bit, I like this a lot, I like this a whole lot" — that kind of a scale. Generally, when you ask kids a question, they're a little bit more positive about things unless they really don't like something. Just saying "I like it" means very little. Saying "I like it a little bit, I like it a lot" is a whole big jump for us. We've developed a size of scale that fits children. Instead of using the words that adults use — "extremely dislike" to "like extremely" — we've chosen words that are very comfortable for kids, using their language. We've been using this scale for about the past six months; we're just now introducing it to the rest of the world. We believe that we can get way more reliable data and find out what kids do like and don't like, then develop based on those numbers.

P&F: What words, then, do you use for children?

Crawford: It's a seven-point scale; on the positive side, instead of "like extremely," we're saying "excellent." And then, descending, it's "really good" and then "just a little good." For the middle point (on the adult scale, that point is "neither like nor dislike"), ours is "in the middle." Then it moves down to "just a little bad," "really bad" and then the extremely dislike point is "hate it." What we found was that kids do not relate to the word "dislike" at all. Anytime we put "dislike" in front of them, I would say, "Kids dislike dislike." They will not rate on that part of the scale at all, so we were getting no negative differentiation among children at all. By breaking out "just a little bit bad" to "it's really bad," we're getting a lot more differentiation among products. We can see a degree of how much they like something.

P&F: How do researchers go about interpreting these expressions of preference?

Crawford: Kids come in and we have them evaluate products — however many products we need to evaluate. The scale I mentioned before then is translated into numbers. We've determined that those scale terms are an equal distance apart from each other, so we can make that a more continuous-type scale and evaluate things and compare them based on that.

P&F: Do you always know what is making a child like or dislike something beyond just overall approval or disapproval? How do you get a feel for exactly what they're objecting to or responding to?

Crawford: We have a series of studies. What we like to do, in different flavor categories, is what we call flavor-preference research, in which trained panelists come in and describe products for us. What we're getting from the kids isn't "It's more sweet or floral" or other terms that kids or any other consumers can't articulate. We have a trained group of people who will come in and describe products for us fully; we quantify that. We can

get full descriptions for a series of products. After that, we go to the kids or adults, or whoever the target audience is, and ask them if they like or dislike the products on the kinds of scales mentioned before. We can correlate the data sets together. What we come up with are what qualities are affecting an audience's liking or not liking of a product. From that, we actually can build from a model of what a preferred profile would look like. Children like this or that kind of flavor profile — they want to see some of these attributes highlighted and some of these attributes hidden or

Inside the Virtual Aroma Synthesizer

Givaudan's Virtual Aroma Synthesizer (VAS) is a key tool in the company's flavor-development process. The aroma generator can be adjusted to emit a blend of scents that can be mixed in and out in real time as a customer or panelist smells along, providing direction as simple as "I like this" or "I don't like that." This allows the smeller to avoid having to verbalize the complexities of scent. Once an aroma is agreed upon, the company's flavorists translate the final aroma into a flavor, adding sweet, sour, etc. factors and tweaking nonvolatile ingredients. Our round-table panelists clearly believe that the VAS has sharpened their flavor-development process in a number of technical ways, while, at the same time, adding a bit of fun to the experience of children panelists.

covered up. Adults might like a totally different profile or different attributes highlighted or covered up, based on whatever their preferences are.

Wuest-Murphy: Sometimes when we're conducting panels we'll follow up with respondents to get more information from them in a one-on-one environment. That might elicit more information about *why* they feel the way they do.

P&F: So the more in-depth descriptors need to come from more seasoned panelists?

Crawford: Consumers of any kind can't always break apart words. A big part of that is the language they use. Even if they did say, "Oh, I like this one because it's more sweet," a lot of times it's really not more sweet. People who are specially trained help us translate that better, so that we can build whole profiles.

Luzuriago: When we're trying to understand what kids like or dislike or how they express themselves, it's very difficult. We've used this tool, VAS — Virtual Aroma Synthesizer, Givaudan proprietary technology (see **Inside the Virtual Aroma Synthesizer**) — which is an instrument that allows you to blend different ingredients or different flavors in real time, see the effect of all those combinations and have an impression of how the flavor's going to turn out. When the kids are with us in front of an instrument, they can express themselves in terms such as "I like this," "I don't like that," "This is good" or "This is bad," but we know exactly what's in there. So we can understand much better what they like and dislike without them expressing themselves in a sensory language — for example, when there are green notes and caramel notes, they tend to like it; when there are floral notes, they dislike it.

We also use the VAS in one-on-one interviews. This instrument allows kids to be mini scientists, guiding the



The Virtual Aroma Synthesizer emits a blend of scents that can be mixed in and out in real time.

flavorists can translate what's on a panelist's or customer's mind. The VAS pares the flavor-testing process to a simple "like/don't like it." The result is hundreds of iterations in just hours.

P&F: How did it come along that you worked with children?

Crawford: I've been in this kind of business for maybe 20 years. More and more, within the past 10 years, the whole market has noticed that kids have their own ideas. It used to be that we always would go after what the moms wanted — even if it was baby food, people would go after what moms would buy versus if kids would like it or not like it. It's really been in the past five years that kids' opinions have become so much more important. There is no other way to go than to figure out (I think this is a global phenomenon) what kids want, because they do have their own ideas now and their own preferences, and they won't eat what they don't like.

Berry: They have a lot of command on the purchasing power.

design and creation of their own flavors. The flavorists then take this information and create specific flavors for kids. If you think about an adult trying to design a flavor for a kid, it's very difficult. Kids probably are not going to like what I like. If we can use the feedback coming from the kids using this instrument, we can gather a lot of information very quickly and then design specific flavors for them. The VAS process is very successful with kids because they think it's like a video game.

Along the same lines, with traditional consumer tests, you present three, four or five samples to taste, and that's all the concepts to which panelists are exposed. But with this instrument, they can smell 30, 40 or 50 different combinations, and very quickly we can collect a lot more information from the kids that will increase the chances of creating kid-preferred flavors.

The VAS combines human perception (smell) with instrumentation to translate smell to taste. Your nose tells you which aromas you like, and — using algorithms that link smell to taste — our flavorists convert the preferred aroma to the target flavor. The flavorists arrive at a beginning flavor formulation and then adjust for the base and nonvolatile ingredients, as well as sweet, sour and other attributes not related to smell.

The VAS helps us eliminate the communication barriers to flavor development. No more trying to explain what you mean by "more green," "fresher" or other imprecise descriptors. No more hoping that

Crawford: If they won't eat it, their moms eventually are going to stop buying it. We just figured that out eight or 10 years ago, looking at how in the world we can start talking to kids and start discovering what it is they do and don't like.

Berry: Something to consider is that, these days, it's not just the moms buying things for them. Kids have their own money. They have their own spending power — they have allowances and take little odds-and-ends jobs to earn money of their own. It's not just about the moms buying anymore — kids are buying for themselves and using their own money to do it. You have to address their needs more succinctly.

P&F: Has the evolving nature of childhood fed this changing approach?

Wuest-Murphy: I think the ideal of childhood has changed. I was reading an article last night that the term "teenager" didn't even appear in print until the 1940s. The notion of this idealized childhood — that's a very modern phenomenon. And it's still developing. Before the Industrial Revolution, kids didn't even have a childhood; they worked when they were young. "Kids" is still an evolving concept.

P&F: How do children's tastes change as they age?

Berry: Earlier, we talked about the fact that kids are looking for more complexity. They don't want as much simplicity in their flavors. They want more complex and intense flavors — higher levels of flavor usage or a sour component, something that makes it more intense.

Crawford: The older you get, the more experiences you have. When kids are around 5 or 6, their only experience is what their parents or caregivers have given them — that's what they end up liking or not liking. The older they get and the more that they have exposure to whatever their peers are doing, or what they see on TV or what's out there, the more their tastes start changing. The older you get, the more experiences you have and the more you can start forming your own opinions based on what you've seen.

P&F: How is this type of research transformed into product concepts/products?

Crawford: When we determine what a child or any consumer would prefer, and we've gone through the whole screening process, we actually can say, "This is a profile." We have flavor chemists on staff who can build whatever that profile is. We actually build it into whatever application we're looking at, whether it's a beverage or savory product or a sweet good product. Then we take that back and revalidate it with kids to ensure that, yes, in fact, this is a profile or type of flavor that they want — it's not just a flavor; it's a full profile. These are more complex profiles, so they might have two or three different whole flavors. It's not just as simple as going out and saying, "Here's a strawberry." It's a profile of that strawberry and whatever else is with it.

P&F: Are flavorists introduced in the research stage at all — say, talking to the kids?

Crawford: They're involved a lot when we have our trained groups come in and describe the products. The flavorists are involved in making sure that the flavorists' language and our descriptive panel language are very similar. This way, when data comes back to the flavorists and we say, "Oh, you need to have more green notes," we are talking about the same green notes. It's really more of a translation. Flavorists know it's not what they like that's important; it's what the consumer likes. Our flavorists probably like things totally different from what a consumer — particularly a kid — would like. Flavorists' involvement is in the description of the product so that they can translate a piece a lot easier.

I really think this is where the VAS helps us a lot. If we start a project with kids, and the kids react with the VAS, saying, "I like this, I don't like this, I'd like more of this, less of this," then the VAS can give a print-out to our flavorists that provides some very specific information.

Luzuriago: The VAS generates a formula that the flavorists can take and reproduce to match the profile that the kids smelled.

Crawford: Once the flavorists have that formula and put together a flavor, that's when we can go back out and validate the flavor directly with the kids to see if the smell translates to the taste.

Luzuriago: There are a lot of tools and information used throughout the process. Depending on what kind of product we're looking at, we'll use different tools throughout the flavor-creation process either to create a new concept that we can leverage out in the market or a new product that the customer is requesting. It's the combination of all these tools and capabilities that allows us to get there. **p&f**