Pulling the Lid off Beverage Flavor Challenges

Bringing novel flavor profiles, fortified beverages and organic products to market

The energy drink market, taking advantage of new hypoallergenic proteins, is expanding its consumer base to women and children, presenting novel formulation challenges for beverage flavorists.

Beverage is the category in which new flavors often appear first, which makes it a segment worth watching. In addition, the range of fortified offerings and other innovations continues to evolve flavor chemistry. Meanwhile, customers demand solutions that allow them to push the envelope on shelf life in both powder and liquid beverages. As a result, flavor teams regularly add new profile types, skills and technology to their creative palates.

Formulating the Unfamiliar

"We've gotten some challenges from our customers to design exotic fruit [flavors] for beverages," says FONA International flavorist Denise Re. "Something novel is a bigger challenge, and I find it interesting to work on something that's brand-new. I can use my creative talents a little more than just making a standard orange flavor. I like the challenge of researching and trying to figure out if that exotic fruit resembles anything else we have in our tool box." In addition, Re works in concert with the analytical and sensory groups to ensure the team is matching the customer's flavor target.

"It's important [to consider] the client's expectations for that product," says FONA food scientist Jessica Zielinski, adding that the obscurity of certain exotic fruits can make it difficult to deliver all-natural flavors. And when it comes to targets such as superfruits, understanding customer expectations becomes even more important. This begins with an education in flavor descriptors. "Nomenclature is important in meeting the flavor development aspects of a product," Zielinski says. "We work to both provide tools for our customers and become equilibrated to their tasting nomenclature. We break descriptors out by category because something 'juicy' in one category may be different from 'juicy' in another category.

"Many of these superfruits have extremely bitter characters," she says, "and [customers] want to be able to use that name but have it taste [for example] a little bit like a raspberry, too. We have to read what our customers' expectations of the concept are, not necessarily that fruit right off the vine."

This strategy of pairing allows customers to introduce novel flavors to consumers while retaining acceptability. In fact, some exotic profiles may launch under fantasy flavor names or the names of similar flavors, as in the instance of early acai flavors that were tagged to cranberry. Of course, as consumer acceptance builds, so too does the sophistication of novel flavor profiles.

Fortified Formulations

Beverages are fortified with an increasing array of materials such as vitamins and omega-3 fatty acids. Meanwhile, flavorists must also take into account any maskers that might be used in such formulations, which may require encapsulation expertise.

"We're doing a lot of work with proteins and finding flavors that work well in protein beverages," says Zielinski. As energy beverage marketers begin to target smaller consumer segments, the formulation challenges shift. As the segment matures, customers are increasingly willing to invest in the research it takes to launch a beverage for a niche audience. These segment-driven launches may target as little as 5% of a given market segment, such as extreme athletes.

Simultaneously, energy beverage clients are expanding their consumer base. Once aimed squarely at men, energy beverages are now being marketed to women with fortified offerings and to children as "soft energy drinks." These demographic and conceptual shifts change the entire way these beverages are formulated: flavor, amount and type of protein, fortification, mouthfeel and packaging.

Pamela Marcus, market associate at FONA, explains that marketers are introducing different varieties of proteins, such as a variety derived from yellow peas that is reportedly hypoallergenic, making it an attractive option for beverages offered to women and children. The flavors associated with these next-generation protein beverages tend to be indulgent: chocolate peanut butter, mocha, tiramisu, etc. Marcus notes that these flavors serve to entice consumers while masking off-notes that strawberry flavors, for instance, cannot.

"Processing [some higher-level protein beverages] is not very lab-scale-friendly," says FONA senior scientist Susan Milovanovic. "The equipment is expensive, and if you don't have the complete line for the equipment, your evaluation of the end product could last only weeks. You may not be able to tell what your beverage will taste like throughout its shelf life. It's not something you can put in a microwave, it's not something you can put on the stovetop and mimic processing." She adds that proteins in waters and similar beverages can usually be managed more simply through microwaving and benchtop processes.

As a result of these and other complications, both Milovanovic and Zielinski are expected to be well-versed in the non-flavor ingredients that go into a beverage formulation and the impact those materials may have on flavors. Being able to decipher among protein types, for example, can help flavorists ascertain that one client's protein will work best with a citrus, while another's may be better paired with berry flavors. "Texture—mouthfeel—is a very important part of protein flavors," says Zielinski. "We work closely with other suppliers in order to bring full solutions to the customer. Having those partnerships is key."

Natural and Organic

"A lot of work we're doing on the liquid side is in organic flavors," says Milovanovic. Customers are often unaware of the many complexities of formulating in this category, necessitating extensive education—particularly in the alcoholic beverage category. "Things [in that category] get even more complicated because of TTB (Alcohol and Tobacco Tax and Trade Bureau) status," says Milovanovic. "Customers don't always know that it has to be approved and go through a process. Sometimes you even have to send out the flavor to get approval. What hurts us is to get it approved you almost have to divulge the entire flavor formula."

Complicating already complicated matters is that there are a number of levels of "organic" in the marketplace. "There are different beliefs among the certifiers as to what is and is not organic compliant," says Zielinski. "So after doing extensive research, our regulatory has a strong case, but that doesn't mean that it's easy to convey to our customers. The truth is that there are no flavor chemicals that are 100% organic certified. We're dealing more with the 90% and 95% certified categories." Flavor materials of course typically fall into the remaining 5% or 10% of the beverage formulas.

"Customers think they want an organic flavor," adds Milovanovic, "but they don't really understand that in some cases an organic-suitable flavor might be their best bet based on some of the constraints … and that flavors can fit into that 5%."

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9 Trends Shaping Beverage Flavors

During a recent discussion, Pamela Marcus, market associate at FONA International, shared her insights into some of the top trends and innovations in beverages. While peach, citrus, strawberry and fruit punch-type flavors dominate overall, she identified a number of intriguing trends shaping the market in ways that will challenge the techniques and technologies of flavor chemists.

Functional beverages

Tapping into the health and wellness boom, beverages are increasingly fortified with materials that promise results such as weight control. Masking the associated off-notes is the flavorist's challenge.

Vitamin-fortified beverages

Marcus notes that berry, citrus, lemon and lime flavors dominate this category. However, pomegranate and tangerine varieties are making headway. Again, off-flavor masking is a key component of these beverages.

Low-in

Though other claims, such as natural, are gaining ground, beverages boasting reduced sugar, salt, fat and calories remain popular.

Natural/organic

Both claims are growing in juice categories, while organic is making strides in areas such as RTD teas.

Digestive health

Capitalizing on the success of yogurt offerings, this trend is migrating to the beverage arena.

Energy beverages

The category is still growing, but is beginning to reach its limits, particularly among male consumers. Between 2006 and 2007, the energy beverage market grew by nearly 25%. Meanwhile many of the offerings are changing their images from "heavy" masculinity to something more appealing to female consumers. Marcus offers the example of LIVE energy beverage, which is available in green tea, acai and sugar-free varieties.

Tea

Green and black teas remain the most popular, though rooibos (or "red tea") is emerging. This category, particularly RTD teas, allows for a great deal of flavor innovations, mixing unfamiliar flavors with the more familiar tastes of tea.

Pairings

In tea and other beverage segments, the combination of familiar and novel flavor profiles allows marketers to launch new and unusual tastes. Marcus notes that strawberry and raspberry can be coupled with guava, litchi, kiwi or blackberry profiles to bolster consumer acceptance.

Smoothies

This category is a strong area for introducing teens and tweens to novel flavors such as mangosteen and pomegranate.