

# The Keys to Novel Citrus Flavors

Unique citrus fruits help drive innovation in flavors

**M**iyauchi Iyo tangor, Xie Shan Satsuma mandarin, Sidi Aissa clementine, Kabosu papeda hybrid: These are not household names in the citrus world. These and other somewhat obscure fruits comprise a fraction of the more than 1,000 varieties on display in the century-old University of California Riverside Citrus Variety Collection ([www.citrusvariety.ucr.edu](http://www.citrusvariety.ucr.edu)), the site of Givaudan's ongoing trademarked Citrus TasteTrek program. These excursions—featuring marketing, R&D, applications and flavor chemists—present at-source exposure for creative and technical staff to rethink what citrus can be, to ask “what’s next,” and ultimately to develop flavors that are differentiated and provide signature. The process involves a hands-on visit to the grove to gather sensory insights on preselected citrus varieties, and the analysis and vetting of various varieties, eventually resulting in new, winning citrus flavors for food and beverage customers. Last year's crop of lemon and lime flavors—which could be formulated into applications such as soft drinks or iced tea RTDs—helped generate a 25% increase in interest from customers, according to Givaudan. In addition, the company uses the program to analyze citrus varieties for aroma volatiles of interest. Givaudan's 2009 program resulted in 12 substantial leads for the company's portfolio of orange, lemon and lime flavors.

In a recent interview with *Perfumer & Flavorist* magazine, Givaudan's global product manager for citrus, Dawn Streich, noted that the citrus program seeks to create flavor solutions for customers that provide newness and, most importantly, competitive edge. She added that the multiple varieties in the Riverside collection differ organoleptically from leading citrus varieties such as orange, lemon and lime, and feature varying qualities depending on time of year and maturation. In fact, some citrus types tend to be most compelling when under- or overripe. This year's group encountered unique citrus fruits such as Indian lime, along with hybrids such as lemon-pomelo and kumquat-mandarin. Among the compelling notes they



*The variegated pink-fleshed Eureka lemon is an aesthetically unique fruit with notably acidic flesh.*

discovered were cherry, floral, spicy, banana, cucumber, cilantro, sulfur and more. One interesting variety noted by Streich is the variegated pink-fleshed Eureka lemon (**pictured**). Sold commercially as Pink Lemonade, it has a remarkable striped skin, few seeds and high acidity.

The feedback the team gathers, says Streich, coupled with formulation, ingredient and consumer knowledge expertise, allow for the development of a range of citrus flavors that create a point of difference for customers and consumers: “When our customers receive our flavor, we want to have something in there that makes them say ‘this is something that stands out.’” And when that flavor, incorporated into a product, arrives on store shelves, the goal is to ensure that this “wow” factor is communicated.

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