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Showdown at the Coffee Shop



Tony Cenicola/The New York Times

BATTLING FOR YOUR TASTE BUDS From left, Sweet 'N Low (saccharin), Splenda (sucralose), Equal (aspartame) and a newcomer, Truvia (stevia), share a market of often impassioned fans.

By KIM SEVERSON Published: April 14, 2009

BELINDA CHANG loves the balance of flavors in her Diet Coke.

Multimedia



Graphic How the Sugar Substitutes Stack Up

Each can — she goes through about four ice-cold ones a day — has a reliable acid bite that marries well with the caramel taste of cola and the sweetness of aspartame.

This is no offhand analysis by an inferior palate. Ms. Chang is the wine director of The Modern restaurant in the Museum of Modern Art. She says she has paired Diet Coke with the wine and cuisine of nearly every winemaking region in the

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The Takeaway With The Times's Kim Severson

world.

"The winemakers in Italy made fun of me for two weeks, but I didn't care," she said.

Passion for artificial sweeteners also runs deep in Medini Pradhan's Chicago-area kitchen. Ms. Pradhan, who runs a Web site dedicated to Indian food and culture, sweetens her hot tea with three packets of Splenda and stirs the sucralose sweetener into varan, a version of yellow dal.

"I'm a Splenda-holic, I tell you," she said.

Ms. Pradhan would not pick up a blue packet of aspartame anymore than Ms. Chang would switch to a drink flavored with Splenda. And pity the coffee vendor in New York who doesn't know that a black and pink means a black coffee with a packet of saccharin.

For the last decade the big three — pink packets of saccharin, aspartame in blue and sucralose in yellow — have fought to a kind of stalemate. But now a new player, dressed in green, hopes to shift the balance of power, opening up the \$1.2-billion-a-year world of fake sugar to all kinds of changes.

The [Food and Drug Administration](#) agreed in December that rebudioside A, an extract from the leaves of the stevia plant, is safe to add to food and drinks.

The stakes are high. Despite nagging health concerns and flavors that are about as much like sugar as margarine is like butter, almost half of all American households use some kind of no-calorie sweetener, according to 2007 figures compiled by Packaged Facts, a market research firm. Although finding a no-calorie sweetener that tastes exactly like sugar remains the holy grail, the street fight is getting people loyal to the distinct flavors of one fake sugar to jump to another.

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Michelle Litvin for The New York Times

EVER LOYAL "I'm a Splenda-holic," said Medini Pradhan, who prepares dal with the sweetener at her home in Barrington, Ill.



Wally Eberhart/Getty Images

The stevia plant, source of Truvia and PureVia.

The stevia products that are coming on the market now are not without problems. They cost five times as much as Sweet'N Low, the oldest and least expensive of tabletop brands. And unless the new sweetener is extracted from the right part of the leaf, processed correctly and mixed with bulking agents that soften its flavor, stevia can have a lingering taste of licorice or menthol.

But stevia has one distinct advantage over all the rest. Because it comes from a plant, marketers can call it a natural sweetener. And that allows companies that have invested millions in new stevia products to tap into two powerful markets at once: natural ingredients and low-calorie products.

"The question is, do people feel strongly enough about a natural sweetener versus the sweeteners they have been using for however many years and have a strong affinity to, based on certain flavor profiles," said Gary Karp, executive vice president of Technomic, a market research firm. It's anybody's guess, he said.

Stevia has long been popular as a sweetener in Japan and other countries, but for years

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the United States Food and Drug Administration has blocked it. In 1995, after pressure from the American Herbal Products Association, a trade group, the government allowed its sale as a [dietary supplement](#), not something that could be used as an ingredient in food. But some large food and drink manufacturers, sensing an eager audience for a sugar substitute perceived as healthier than the rest, began investing in research and lobbying the government.

Two of the biggest backers, Cargill and Whole Earth Sweetener Company, earlier this year began rolling out packets of stevia-based sweeteners, called Truvia and PureVia respectively. The extract is in the companies' drinks, too. Among the new stevia products marketed as naturally sweetened are Sprite Green from Coca-Cola and Trop50, from the PepsiCo subsidiary Tropicana. It's essentially half water and half orange juice doctored with stevia.

To underline their natural claims, stevia products come packaged in green. But stevia is a game-changer in other ways. Manufacturers are blending stevia with other sweeteners to achieve a flavor closer to sugar's. That dovetails with another trend: mixing different sweeteners, including good old sugar.

The makers of Splenda, which holds more than 60 percent of the retail market, have just introduced Sun Crystals, a mix of sugar and stevia that has five [calories](#) per serving. Sugar has 15 calories per teaspoon.

Stevia is being added to some soft drinks that also contain aspartame. And aspartame is being tamed with other, newer and less well-known artificial sweeteners. One is the potent neotame, which is as much as 13,000 times as sweet as sugar and came on the market in 2002.

Another is acesulfame potassium, called Ace K. It's considered a great blending sweetener that helps improve the flavor of other low-calorie sweeteners. It was first used in soft drinks in 1998, but its biggest success is its marriage with aspartame in Coke Zero.

"What's happening now has happened to a much greater degree outside the U.S. for years," said Craig Petray, the C.E.O. of NutraSweet, which makes aspartame. "If you drink an orange soda in China, for example, it's a blend of sugar and sweeteners. That's definitely what's coming here." The days of sodas made only with sugar or high-fructose corn syrup, or [diet](#) sodas that rely on just one artificial sweetener, are going away, he said.

Although most of the money in artificial sweeteners is in beverages, the real fun, he said, is in the packet wars. To that end, his company has partnered with Domino, the sugar company, and developed a "caddy strategy." With it, he hopes to shake up the traditional tabletop sweetener selection.

Consumers are loyal to their favorite sweetener, and to the color of its packet. Now manufacturers like Mr. Petray are mixing up the color code, putting new sweetener combinations in the familiar pink, blue and yellow.

His challenge to Splenda combines aspartame and a touch of sugar in a yellow packet called NutraSweet Cane. It comes with its own spokesman, Art Smith, former personal chef to [Oprah Winfrey](#). He has created recipes like berry trifle and noodles with Asian dipping sauce using the new product.

Mr. Petray's entry in the stevia wars is called Natural NutraSweet, which comes in a green packet, of course. And the company created a new saccharin-free pink packet, too. It was engineered to mimic the initial intense sweetness of saccharin without the bitter

finish. But Sweet'N Low users didn't like it, so the company added back the bitterness.

Saccharin, the first fake sugar, was accidentally discovered by a chemist working in a lab at [Johns Hopkins University](#) in the late 1800s. Its first star turn came during the sugar shortages of World War I. In 1957, it was turned into Sweet'N Low, and the modern artificial sweetener culture, a haven for diabetics and dieters alike, was born. Many a can of Tab was consumed by hopeful teenagers in the '60s and '70s.

Things wouldn't change much until 1982, when Diet Coke made with aspartame and the tabletop sweetener Equal hit the market. Diet sodas became more than just the dieter's option, attracting people who began to crave the taste.

Things stayed pretty sleepy until 1999, when sucralose really started to take off. By that time, [obesity](#) and a rise in [diabetes](#) had more people reaching for artificial sweeteners. Unlike aspartame, sucralose didn't fall apart under heat or lose its flavor over time. Although it does not work as well as sugar and retains a decidedly specific flavor in baked goods, many diabetic households found it a workable solution.

Alicia Brafman, one of the best-known bakers among her circle in Brooklyn, has taken to substituting Splenda in her apple cake so her diabetic husband, Fred, can enjoy sweets again.

"It doesn't taste exactly the same, but if you hadn't had something in a long time you just think, this is a piece of apple cake and it tastes delicious," she said.

And it didn't hurt that the authors of both the South Beach and the Atkins diets encouraged Splenda's use.

There are plenty who believe that none of the sweeteners, even stevia, is without complications. Researchers are studying whether artificial sweeteners trigger a negative metabolic response that actually causes people to gain weight.

Saccharin, which is by far the most scrutinized of the sweeteners, once carried a warning label connecting it to [cancer](#) (the warning was rescinded in 2000). Some health advocates have argued that sucralose is an artificial ingredient the body can't easily process and that stevia extracts simply haven't been studied enough.

The biggest cloud of doubt hangs over aspartame, which is the target of vigorous concern among holistic health practitioners and many health bloggers, who link it to a host of conditions including neurological damage.

Despite hundreds of studies, nothing has been proved, according to a wide array of doctors, researchers and health advocates, including Michael Jacobson, executive director of the [Center for Science in the Public Interest](#).

"In general, I would agree that none of the sweeteners are really harmful," he said. "But the question is in the margins. Is there a small health risk?"

But for the die-hard lovers of diet soda and those little packets, none of that really makes a difference.

Ms. Pradhan, the Indian cook from Barrington, Ill., once loved Equal but she heard it might be dangerous. So when Splenda came along, with its promise of versatility in the kitchen and its connection, however tenuous, to sugar, she switched.

"My husband teases me that something will be wrong with Splenda, too, but they haven't found it yet and it's not like I am drinking gobs of it," she said.

Besides, a little Splenda gives her an excuse to eat Indian sweets like gulab jamun, made

with balls of fried dough swimming in heavy sugar syrup.

"You cannot use Splenda for that," she said.

An earlier version of this article referred incorrectly to Coca-Cola's role in producing stevia packets. It also misstated the company that produces the sweetener PureVia. It is Whole Earth Sweetener Company, not PepsiCo.

A version of this article appeared in print on April 15, 2009, on page D1 of the New York edition.

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