



CLEARED FOR LAUNCH:

Cargill's new EverSweet[®] + ClearFlo[™]
set to redefine the zero-calorie
sweetener landscape

For decades, ingredient suppliers have searched for the holy grail: a calorie-free sweetener that mirrors the sweetness profile of sugar. With the launch of Cargill's latest advance in zero-calorie sweeteners, EverSweet® + ClearFlo™, that quest takes a big leap forward.

Historically, one of the biggest hurdles with stevia was its relatively low solubility and dissolution in water. "For example, with Reb M alone, its low solubility can limit how sweet you can make products," explains Smaro Kokkinidou, a principal food scientist with Cargill. But even those low levels don't come easily; formulators need to find workarounds, such as heating up the stevia solution to 60° C or more to coerce the sweet molecules to dissolve.

Food scientists at Cargill and elsewhere have searched for solutions to improve solubility of Reb M and other stevia-leaf extracts since stevia hit the market. While many had given up, the team at Cargill persevered. Ultimately, they landed on ClearFlo™, a natural flavor that proved to have wide-reaching effects.

"ClearFlo first captured our attention with its impact on stevia solubility," recalls Wade Schmelzer, one of the company's top stevia experts. "We quickly learned it could boost the solubility of EverSweet up to a surprising 30%, about 200 times more concentrated than Reb M by itself."

EverSweet® + ClearFlo™

STEVIA SWEETENER + NATURAL FLAVOR

EverSweet® stevia sweetener is made via fermentation, and ClearFlo™ is a natural flavor. Together, they offer clear advantages over other Reb M sweeteners.

Clear benefits

On its own, ClearFlo's impact on solubility was a game changer, but as Cargill's scientists learned more about the natural flavor, they uncovered a litany of benefits. ClearFlo didn't just enable much higher concentrations of EverSweet in solution, it also allowed the high-intensity sweetener to dissolve in water at ambient temperatures – with no heating required. For beverage processing facilities without heating capabilities, this is a significant advance.

"Previously, this inability to dissolve at ambient temperature limited some manufacturers from using Reb M in their facilities," Schmelzer explains. "EverSweet + ClearFlo opens that door, giving them a powerful new sugar-reduction tool." Those same characteristics offer benefits to long-time stevia users, too, as the sweetener system's near-instantaneous dissolution enables faster manufacturing times.

The processing gains were dramatic, but as researchers experimented more with the natural flavor, they discovered equally impressive flavor-modifying capabilities. Even with recent advances in stevia technology, the ingredient still has some sweetness gaps, especially in no-sugar reformulations. Most noticeable is its sweetness linger, which can be a negative in certain applications. Cargill found EverSweet + ClearFlo dramatically reduces sweetness linger, delivering a more sugar-like experience.

"It's unlike anything we'd ever worked with before," Schmelzer says. "We've evaluated countless other options for modulating and optimizing the flavor of EverSweet, but ClearFlo was just so much more versatile and robust."

Customer confirmation

Soon, the team was demonstrating prototypes of EverSweet + ClearFlo with customers, asking for feedback as they refined the sweetener system. The response was exceedingly positive... and on at least one occasion, their presentation and prototype tastings ended with applause. "That was definitely a first," Schmelzer recalls.

It's little wonder customers are moved to cheer. Using ClearFlo + EverSweet, Cargill has tackled some of the toughest reduced-sugar applications, including the challenging energy drink space. In this segment, formulators often double-down on sweeteners as they struggle to overcome the bitter, astringent and decidedly off-notes that accompany the vitamins, minerals and caffeine these beverages routinely tout.

With EverSweet + ClearFlo, Cargill created an orange-flavored energy drink that trained sensory panelists pronounced a clear winner. The beverage's orange flavor intensity could shine, since the EverSweet + ClearFlo combination helped mute the challenging flavors associated with the functional ingredients in the formula.

The sweetener system offers one more advantage, as it supports simpler label declarations. In the U.S., EverSweet can appear on ingredient statements as "stevia sweetener;" ClearFlo labels as a "natural flavor." Cargill proprietary research consistently finds consumers approve of these straightforward designations.

Applications a-plenty

To date, Cargill's application work with EverSweet + ClearFlo includes dairy, performance nutrition beverages, colas, energy and immunity-boosting drinks, flavored waters, teas, coffee products and alcoholic beverages... but opportunities for the sweetener system extend well beyond beverages. Other promising applications include dairy and dairy-alternative products, fruit preparations for yogurt and confectionery products. In addition, EverSweet + ClearFlo can deliver a great flavor profile for BBQ sauces, ketchups and similar sweet sauces.

Kokkinidou is particularly keen on the possibilities for large beverage manufacturers who make concentrates and syrups at one location, then ship those bases to their bottlers. "EverSweet + ClearFlo can be used at much higher concentrations, and it remains stable through transport," she explains. "That represents a two-fold benefit. It saves on transportation costs and allows brands to look at much deeper sugar reductions, including the diet cola space, something that just wasn't possible in the past."

Schmelzer concurs. While the company is still learning the limits, he believes EverSweet + ClearFlo could finally enable zero-calorie sweeteners to break into foodservice fountain drinks, flavor syrups and similar, highly concentrated formulas. He says the early work looks very promising: "We'll see how far we can go, but the dramatic improvements in solubility, stability and flavor suggest we can create some pretty concentrated formats."

The EverSweet + ClearFlo offering will stand apart from anything else in the marketplace. "There are a lot of flavor enhancers, flavor maskers and solubility tools out there," Kokkinidou acknowledges. "They might solve for solubility or solve for an aspect of taste, but the fact that EverSweet + ClearFlo addresses solubility and dissolution, improves taste and is label-friendly — there's just nothing else that can do all that ClearFlo can."

To learn more, visit cargill.com/sugarreduction, contact 1-800-932-0544 or customerservice@cargill.com.

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