



SWEET SUCCESS:

Continuing to raise the bar
on stevia sustainability

With a combined tenure at Cargill that spans nearly thirty years, Stuart Schulz and Alyssa Leyva have led a myriad of mission-critical projects for the company. However, it's their work spearheading and championing the company's stevia sustainability efforts that may serve as their most enduring legacy. We caught up with Stuart, who leads Cargill's North America stevia sustainability efforts, and Alyssa, who serves as the Product Line Manager for high-intensity sweeteners, as they were finalizing its latest Life Cycle Assessment (LCA) for its EverSweet® stevia sweetener.

Let's start by setting the stage a bit – can you give a quick background on Cargill's work to advance sustainability within its stevia product line?

STUART: When Cargill entered the stevia market more than a decade ago, stevia sustainability standards didn't exist – so we built them from the ground up. We put boots on the ground to provide direct training, brought in third parties to conduct annual audits against our standard, and most recently, became the first stevia supplier to have our entire grower network benchmarked at FSA 3.0 Silver Level by SAI Platform's Farm Sustainability Assessment. We even created a [Virtual Stevia Harvest Experience](#), which enables customers and consumers to follow our stevia leaves from field to final product.

Along the way, we've trained more than 1,000 farmers on sustainability practices, raising the bar and making the industry better. Some of those farmers no longer grow stevia, but the knowledge they gained is transferable to other crops... so we're having an impact that ripples beyond the stevia fields.

ALYSSA: And that's just one part of our stevia sustainability journey. As we learned more about the stevia leaf – and technology evolved – we leaned into sustainability and through our Avansya joint-venture with dsm-firmenich, pioneered a new approach to producing some of the best-tasting sweet components, Reb M and Reb D.

These molecules are exceedingly rare in the stevia leaf, but Avansya scientists determined they could be produced more sustainably using fermentation. We backed that up by completing our first LCA on EverSweet in 2021, which affirmed the sweetener's environmental credentials.

In the span of just two years, Avansya has completed two LCAs on its EverSweet stevia sweetener. Why did you feel it was important to redo the assessment?

STUART: There are several reasons we wanted to revisit EverSweet's LCA. Perhaps most importantly, the efficiency of our production processes has improved markedly over

the last several years. Since 2021, we've dramatically scaled production and improved strain yields, so we knew our previous results were outdated.

We also wanted to evaluate EverSweet against a broader cross-section of sweeteners. In our initial LCA, we focused on comparisons to cane sugar and other stevia production methods, such as leaf-based and bioconversion. With this assessment, we added synthetic sweeteners like sucralose, giving brands additional reference points.

Additionally, it allowed us to use the European Commission's preferred product environmental footprint (PEF) impact assessment methodology and ISO 1044 panel review, giving brands confidence that they can use our results to quantify the positive impact on their sustainability metrics by switching to EverSweet from other sweeteners.

So what did you learn?

ALYSSA: A lot! We set out to understand how EverSweet, which is derived from fermentation, compares to other novel production methods like bioconversion, as well as artificial sweeteners like sucralose and conventional beet and cane sugars. The results blew us away. We found that EverSweet demonstrates a 97% lower water footprint and produces 81% less CO₂ than sugar. It's also a dramatic approach to increasing the sustainability of Reb M stevia sweetener production, requiring 92% less water resources and producing 76% less CO₂ than stevia sweeteners produced through bioconversion. In fact, on these key sustainability metrics, EverSweet outshined all the biologically-based sweeteners in our comparison.

STUART: But what was most impactful to me was how EverSweet stacked up to the artificial sweeteners. Fermentation relies on biological materials and processes. Artificial sweeteners are produced through chemical synthesis, a process that is highly efficient. However, the study showed that EverSweet and the synthetic sweetener sucralose delivered nearly identical environmental profiles.

What about other factors that aren't covered by an LCA, like biodegradability?

ALYSSA: That's a good point – LCAs don't capture everything. They go from farm to final product, but that leaves factors like biodegradability outside the scope of a typical LCA. That's why we've also engaged third-party testing to confirm that stevia glycosides are biodegradable, meaning they won't build up in surface or ground water. It's another point of differentiation as brands consider their sweetener choices.

EverSweet appears to have some impressive environmental credentials, but what do those numbers mean for food and beverage manufacturers?

STUART: The big takeaway for our customers is that using EverSweet can help them reach their own sustainability goals. The metrics revealed by our LCA allow customers to instantly see the kind of impact EverSweet will have on things like carbon footprint and water resources. For companies with ambitious Scope 3 sustainability goals, EverSweet can support them on their journeys. Going a step further, for brands buying carbon credits, replacing an ingredient like conventional sugar with EverSweet can reduce their overall carbon footprint, offering an alternative mitigative avenue within their own supply chains that can offer potential cost-savings.

So there are some clear benefits for manufacturers, but how important is sustainable sourcing to consumers?

ALYSSA: Shoppers are more focused than ever on the environmental impact of the products they consume. A recent survey from FMCG Gurus revealed that nearly three-quarters (73%) of consumers say they've made active changes to their diet and lifestyle in the last two years to reduce their carbon footprint.

Nearly as many, or 68%, contend that food, drink and supplement brands should be doing more to protect the environment. As consumer awareness grows in response to a populace directly impacted by the effects of climate change, those numbers will only grow.

Consumers may say sustainability considerations are important, but aren't factors like taste and cost still bigger priorities?

STUART: We used to say it's all about taste, cost and label. Now, it's about taste, cost, label and sustainability. If you're going to be a manufacturer today, all four of those pillars are table stakes; otherwise, you're going to be left behind.

ALYSSA: That's what makes EverSweet so special. It delivers the total package, with a great taste and versatility that enables it to be formulated into all kinds of reduced-sugar and no-sugar-added products, including beverages, dairy, snack bars, confectionery, plant-based dairy alternatives, condiments and so much more. Alongside its winning taste, EverSweet also offers a great value proposition, with a cost-in-use that is comparable to or even better than sugar. On top of it all, it has this amazing, quantifiable sustainability story. It's a win-win-win!

So what's next for your stevia sustainability efforts?

ALYSSA: In the near term, we're excited to share the results of Avansya's latest EverSweet LCA with customers. I'm convinced that our stevia portfolio offers the best-tasting, environmentally conscious products on the market – and can't wait to share our story with food and beverage manufacturers here in North America and around the world. Of course, this isn't the end. Our journey toward more-sustainable supply chains is ongoing... and we'll continue to make more improvements. We've only just begun!

Learn more about Cargill's stevia sustainability efforts and the EverSweet portfolio [here](#).

EverSweet® is a product of Avansya, a joint venture of dsm-firmenich and Cargill.

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