

ENSURING THE FUTURE OF PLANT-BASED FOOD
AND BEVERAGE WITH BETTER TASTE AND SWEETNESS

HOW TO MAKE PLANT-BASED PRODUCTS BETTER FOR YOU



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Today, just about everybody is aware of the many benefits of incorporating more fruits and vegetables into their diets, from losing unwanted weight to lowering risks of cancer.

And today's shoppers, from vegans to flexitarians to folks who just want to eat better, are increasingly acting on that knowledge every time they go to the supermarket or corner store.

According to a recent Bloomberg report, the plant-based food market is expected to grow to over \$162* billion by 2030.¹ The increasing popularity of plant-based foods is driving a boom in new and innovative products. Today's biggest brands are racing to meet these consumer demands by creating everything from plant-based candies and coffee creamers to nutritional bars and supplements. Right now, there are plant-based yogurts, cereals, ice cream and dressings, with more products being created every year. If people want to eat it, there's likely a plant-based version of it on grocery shelves somewhere—or will be in the next year or so. For the plant-based trend to continue to grow, food and beverage products must taste delicious to consumers.

When looking at the growth of plant-based products in the U.S. and around the world, several trends emerge. First, there is the widening array of new beverages in the dairy alternative space. While soy drinks are projected to grow globally at a CAGR of 3.9% through 2026, other milk alternatives are projected to grow at a 10% CAGR over the same period². Whether consumers are craving the taste of almond or rice milks to coconut or oat, milk substitutes make up a \$2.5 billion industry in the US alone and is expected to grow to \$3.6 billion by 2025, according to Euromonitor. Globally, the \$9.5 billion industry is expected to grow to \$11 billion by 2025³.

Dairy alternatives like nut milks and plant-based cheeses are also becoming more popular among consumers, driven by environmental concerns about dairy farming; food allergies and lactose intolerance among consumers; and taste preferences.

And then there's the explosion in plant-forward nutritional bars and sweet and savory snacks aimed at health-minded consumers who want to experiment with new versions of their favorite treats that they view as better-for-you.

The variety and number of new products is staggering. But the truth is, some plant-based products don't always taste good, and many come laden with sugar, a substance that has been linked to a whole host of health problems. The danger for producers is clear. As products continue to enter an ever-growing market, the "plant-based" label could get a bad name if the products don't meet consumer taste expectations, or if they contain just as much sugar as any other non-plant-based product. How can food and beverage brands create plant-based products that have the flavor and sweetness of their favorite foods and drinks, but without all that sugar?



PLANT-BASED TRENDS: WHAT TO EXPECT IN THE COMING DECADE

Some of the most popular plant-based products will be new twists on old favorites, but created with a focus on health—that of the consumer and the planet—and on taste. These goals can be accomplished by reducing sugar in these products, and then using clean plant-based ingredient technologies and innovations to build back flavor. Current trends to watch in the coming years include:



CONSUMERS CHOOSE PLANT-BASED BEVERAGES OVER SUGARY SODAS AND JUICE DRINKS.

Sales of full-calorie sodas have been on the decline for years, driven by consumer concerns about sugar, as well as government programs like soda taxes and public health campaigns. Increasingly, people are moving away from high-sugar, high-calorie sodas in favor of plant-based beverages, which range from the well known (soy milk, almond milk) to the lesser-known (hemp-based energy drinks). Juices and pre-made smoothies are a huge part of the boom—even as consumers increasingly seek low-sugar or no-sugar versions of their favorite drinks.

A recent study predicts that the global plant-based beverage market will grow at a 14.3% CAGR and reach \$66.53 billion in retail sales by 2028.⁴ And it's not just younger consumers who are embracing these new, healthier products. According to the study, plant-based beverages are gaining popularity among all age groups.

DAIRY ALTERNATIVES BOOM, AS VEGAN AND VEGETARIAN PREFERENCES GO MAINSTREAM.

Today's groceries and markets carry a greater range of dairy alternatives than ever before, from plant-based versions of chocolate milk (in ready-to-drink cartons suitable for lunchboxes) to cashew-based cheeses (perfect for mac and (not) cheese) and oat (not) milk that you can pour over your cereal.

The next frontier for dairy alternatives? Totally new products that don't try to mimic dairy at all. "The category has seen significant growth, but it's used an analog approach up until now," said Casey McCormick, Global Vice President of Innovation at Sweegen. "Something is successful because it's copying a milk or a milk product. I think that next stage is where they look to create new products within the category that doesn't copy what already exists, but is rather a new innovation that has a right to succeed on its own."

THE MARKET FOR PLANT-BASED SNACKS AND NUTRITIONAL BARS CONTINUES TO GROW, AS CONSUMERS DEMAND A GREATER (AND HEALTHIER) VARIETY OF SWEET AND SAVORY TREATS.

The demand for plant-based foods has hit nearly every segment of the snacking market, from the savory (pea and chickpea puffs and crisps) to the sweet (vegan cookies and brownies, plant-based candies and chocolates). According to Future Market Insights, the plant-based snack industry is projected to exceed \$73 billion by 2028.⁵

Plant-based nutritional bars are experiencing similar growth, driven by consumer desires for healthy grab-and-go options and label-friendly products. Major food companies and smaller organic brands alike are moving toward plant-based bars of every imaginable sort, from nut and seed energy snacks to novel plant-based protein bars.



TACKLING PLANT-BASED FORMULATION CHALLENGES

Growing numbers of health-minded consumers are seeking out plant-based foods and beverages, drawn by the years of studies pointing to their many health benefits. And these are not only lifelong vegans and vegetarians. According to Nielsen, although only 6 percent of Americans eat vegetarian, almost 40 percent are now trying to eat more plant-based foods.⁶

While many of these people are making the switch for health reasons, everyone still wants their favorite foods and drinks to taste good. In a 2020 survey, 88% of those surveyed named taste as their primary reason for buying a food or drink product.⁷

Consumers are also increasingly interested in functionality. Functional foods offer a health boost beyond their basic nutritional value—delivering energy, for example, or providing a sense of relaxation. A recent FMCG Gurus report on global food and beverage trends noted that consumers are increasingly looking for products that promote multifunctional benefits.⁸

This interest in functionality has been a major driver of innovation in the beverages market, including plant-based beverages. “People want functional beverages that not only taste good, but pack a healthy punch,” says Kishan Vasani, co-founder and CEO of Spoonshot, a food and beverage intelligence company that leverages AI to predict consumer needs.

According to Vasani, consumer demand for functional drinks has only increased during the pandemic, as consumers became more and more proactive about taking care of their own health.⁹ At the same time, consumers are actively avoiding ingredients that are deemed unhealthy.

Sugar is among the top ingredients that health-conscious consumers are trying to avoid. Even so, most people continue to consume far too much of it. The current Dietary Guidelines for Americans recommends that people should keep their intake of added sugars to no more than 10% of their total daily calories—but the average American consumes double that amount.¹⁰

The impact of all that sugar on public health has been dramatic. A recent article from Harvard Medical School said that added sugar can be “one of the greatest threats for developing cardiovascular disease,” citing its links to increased risks for heart attack and stroke.¹¹

Less sugar, high nutrition, functionality, and good taste: that’s the combination of consumer demands facing today’s creators of plant-based foods and beverages. Removing sugar, swapping in healthy ingredients, and adding nutritional components is often the easy part. Not quite so easy: making an end product without all that sugar that has the same taste that consumers have come to expect from their favorite foods.



CREATING SWEETNESS AND FLAVOR, WITHOUT THE SUGAR

Creating sugar-free plant-based foods isn't as easy as simply replacing sugar with a sugar substitute. Many sugar substitutes are actually great sweeteners, but must be used in combination with other sweeteners and ingredients to best match the flavors and textures that consumers demand. Unlike some of the artificial sweeteners that turned people off of diet sodas and sugar substitutes in the past, today's best-tasting nature-based sweeteners are derived from plant-based sources. Stevia, one of the world's most popular nature-based sweeteners, is made from the leaves of the stevia plant. Stevia sweeteners have no calories, zero glycemic index (making them ideal for diabetic and prediabetic consumers), are heat stable, and are incredibly sweet.¹² Not all stevia sweeteners are alike, and the best-tasting stevia ingredients (like Reb M) occur only in small quantities in the stevia leaf.

THE SWEEGEN SOLUTION

How do today's food and beverage manufacturers use these high-quality plant-based sweeteners in their products, if the best tasting ones are so very rare? To achieve a high-quality stevia sweetness, Sweegen uses a patented bioconversion process starting with the stevia leaf. The result: cost-effective sweeteners from natural sources that are delicious tasting, label-friendly, competitively priced, and offer zero-calorie sweetness and a performance closest to sugar. These sweeteners have gained Non-GMO Project verification in the US market.

Sweegen's product developers, known as Taste Blazers, take a "Creative Building Block" approach to design products made with these sweeteners, adding various elements (and sometimes taking out others) to create the sweetness consumers expect from their favorite foods and beverages. "If we're reducing the sugar in a beverage by 80%, we can build back in the level of sweetness with stevia," said McCormick. "That's relatively simple. But we also need to build back the mouthfeel, so we'll tap into our flavor technology to build back in that thickness and syrupiness that the added sugar was creating."



Sweegen's range of advanced nature-based sweeteners, along with a broad portfolio of unique flavor compounds for taste modulation, is unparalleled in the industry. The recent approval of the framework for steviol glycosides, the best-tasting molecules found in small quantities in stevia leaves, by Codex has paved the way for broad global approval of sweeteners created from Sweegen's bioconversion technology. This approval makes it easier for companies to bring reduced or no-sugar products to their consumers at commercial scale. In addition, Sweegen's Bestevia® Reb M was the first new stevia technology to be approved in Europe.

Products that benefit from Sweegen's technology and expertise run the gamut from legacy items that might gain from better taste or a higher nutrition profile to innovative new products that clients don't even know they want—yet. “We provide the ingredient technology and the product

development services to help get their product from something that's going to be lost in a sea of innovation to something that's going to truly stand out and succeed with consumers,” said McCormick.

And Sweegen is working on bringing even more Signature Sweeteners to market, including Brazzein, a sweetener found in the West African oubli plant that's up to 2,000 times sweeter than sugar. Through their Taste Blazer Full Solutions, Sweegen helps manufacturers create sugar-reduced products that add sweetness while also addressing issues, like texture and bitterness, that might arise with the addition of functional ingredients. “We build them a solution so they don't have to go out and buy 15 different things,” said McCormick. “They can buy one creative solution from us that brings in the sweetening piece, the modulating piece, the bitter blocking piece, all in one.”



CONCLUSION

With the ever-rising consumer interest in plant-based foods and beverages, manufacturers need to find ways to give consumers the delicious sweet tastes they crave—and sugar reduction health benefits associated with using the highest-quality nature-based ingredients.

It's a complex and crucial challenge, driven by booms in everything from plant-based snacks and beverages to dairy alternatives and vegan nutritional bars. Sweegen can help brands tackle food and beverage formulation challenges with their diverse taste portfolio, which includes Taste Modulation Flavor Systems, Signature Sweetener Systems, and Taste Blazer Full Solutions.

Sweegen's team of product developers, known as Taste Blazers, are passionate about helping brands remove the bad stuff, like sugar and artificial sweeteners, and add in the good stuff, like functional ingredients, vitamins, and proteins, while focusing on the bottom line – making better-for-you products taste delicious.

For producers of all things plant-based, Sweegen is leading the way in creating and developing ingredient technologies and innovations to meet consumer demand for elevated taste experiences.



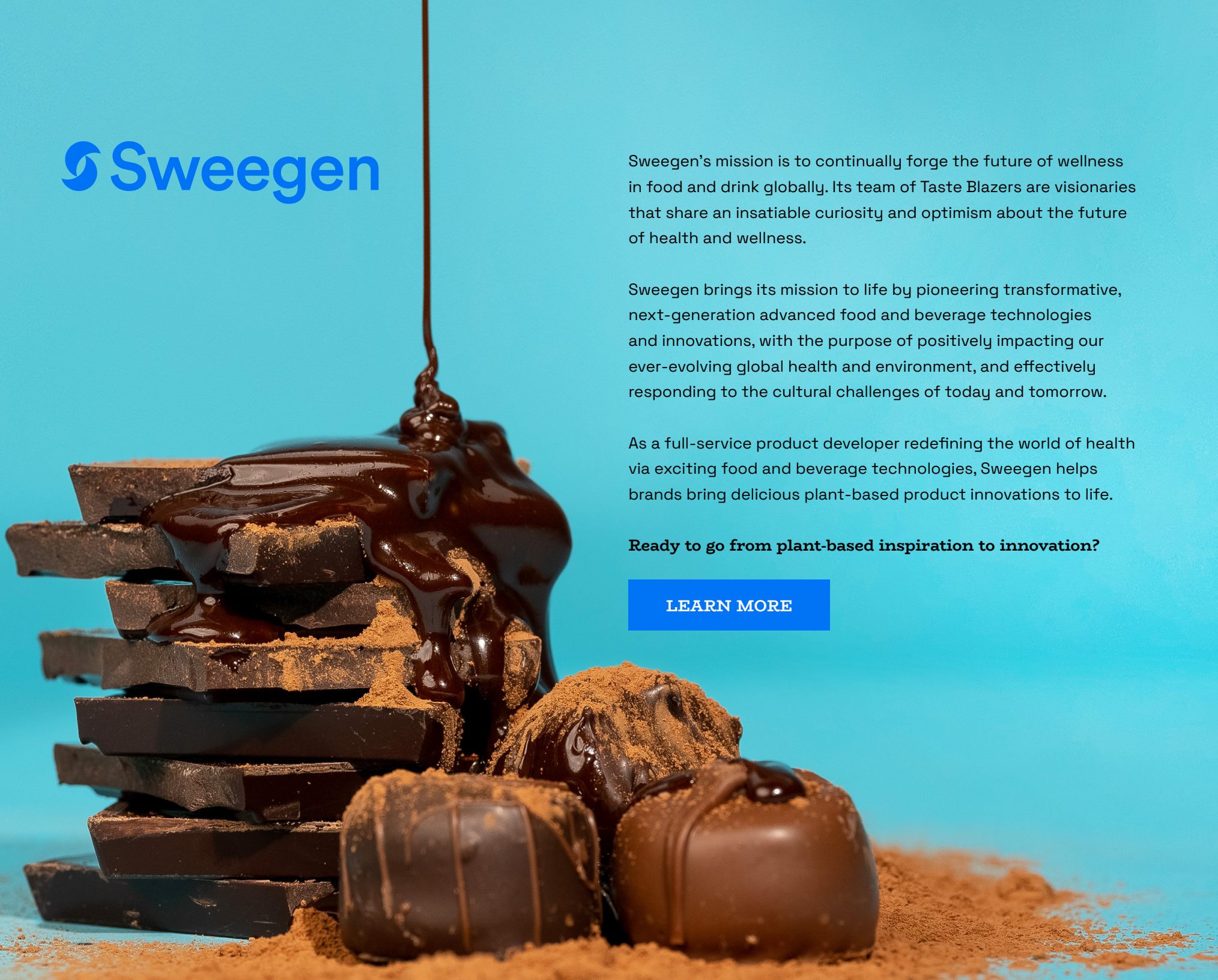
Sweegen's mission is to continually forge the future of wellness in food and drink globally. Its team of Taste Blazers are visionaries that share an insatiable curiosity and optimism about the future of health and wellness.

Sweegen brings its mission to life by pioneering transformative, next-generation advanced food and beverage technologies and innovations, with the purpose of positively impacting our ever-evolving global health and environment, and effectively responding to the cultural challenges of today and tomorrow.

As a full-service product developer redefining the world of health via exciting food and beverage technologies, Sweegen helps brands bring delicious plant-based product innovations to life.

Ready to go from plant-based inspiration to innovation?

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*All currency is in USD



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