Sugar reduction insights

Cargill™ Erythritol

For a growing number of consumers, perceptions around health, diet and sugar content are increasingly intertwined. The pandemic, which brought health to the forefront, amplified those ideas, bringing greater scrutiny to product labels and heightened interest in sugars reduction. This reality brings new challenges – and opportunities – to brands ready to embrace consumers' evolving expectations.

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Diet, sugars and the *Healthy for Me* trend

Today's focus on diet and health aligns with the macrotrend "Healthy for Me," called out in Cargill's proprietary TrendTracker.™ As consumers embrace this more proactive and preventative approach to health, we see its effect reflected in their attitudes around food and beverage choices.

6 in 10 (59%) European consumers believe that eating healthy and nutritious food is key to achieving personal health and wellbeing.

Source: Survey data from FMCG Gurus (2021)

How do they aim to accomplish that goal? For nearly two-thirds (61%), the answer lies in reducing their intake of sugars.

That's a challenge made all the more daunting by consumers' unwavering demands for products that meet their flavor expectations. Research from FMCG Gurus, Cargill and others consistently finds taste is shoppers' top priority when buying food and drink.

Consumers are actively seeking out foods and beverages that have a lower sugars content – but that does not mean they are willing to compromise on taste.

Hitting the sweet spot

While a myriad of factors has led to sugar's image, the shifting public health environment certainly played a key role. In Europe, nearly every country has established some form of national dietary guidelines related to sugars. Policy makers and regulators are being heard by consumers, who are looking for healthier options in almost every food and beverage category. For many, sugars levels are a key factor in deciding how healthy a product is.

Across the food & beverage landscape, sugars laden products are falling out of favor, propelled by a more health-conscious consumer base. With consumers looking to reduce sugars, food and beverage manufacturers are scrambling to respond.

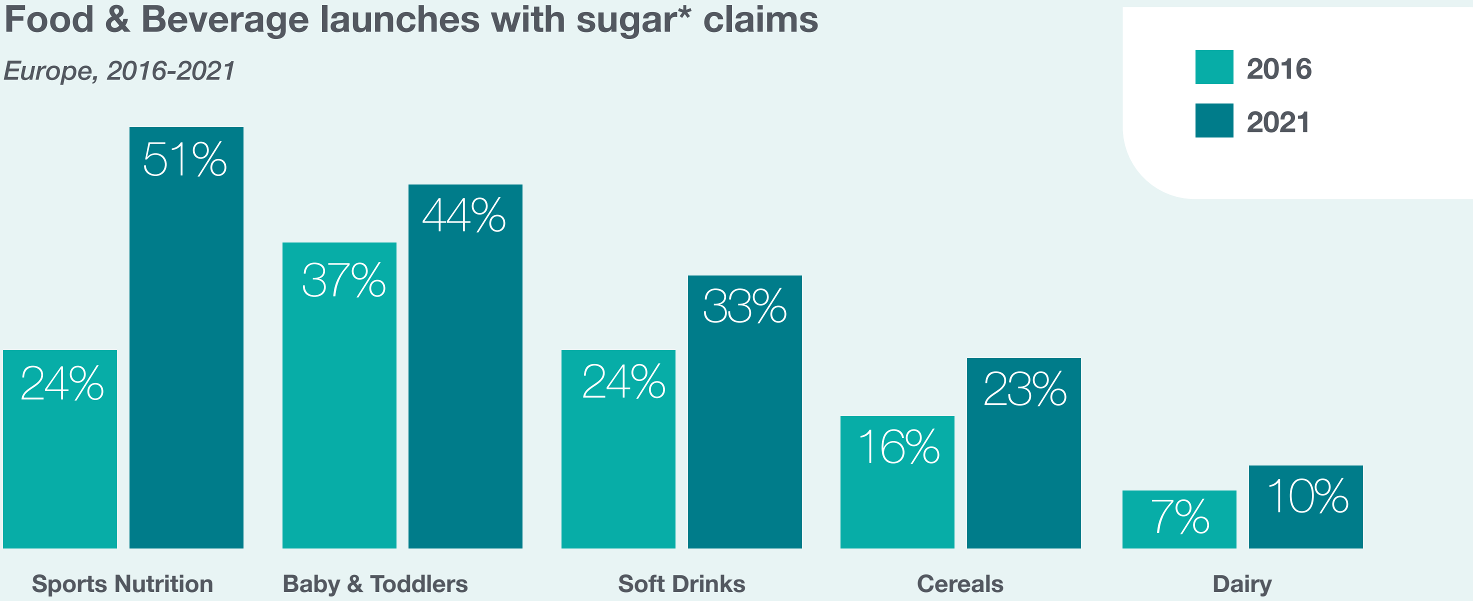
Their progress is evident in the proliferation of sugar-related front-of-pack claims. According to Innova, European food and beverages launches with sugar claims* have seen a 12% combined annual growth rate since 2016.

It is worth noting that the adoption of sugar related claims varies by application. For some categories, marketers are taking a "stealth health" approach to sugar reduction, with smaller cuts and fewer label claims. In other segments, manufacturers are boldly using claims as a means to entice sugar-wary shoppers.

Sports nutrition comes out on top as the most active category as more than half of all new product development comes with at least one on-pack sugar claim. Baby & Toddlers, cereals and soft drinks are other categories showing strong growth in new products with sugar claims.[1]

Food & Beverage launches with sugar* claims

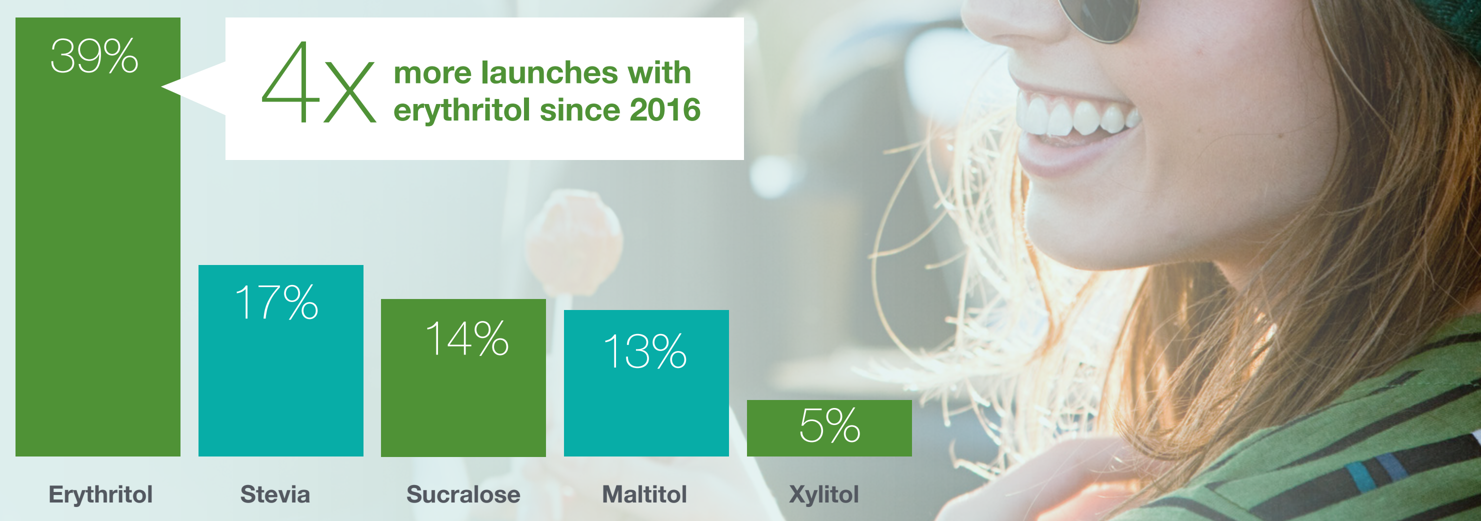
Europe, 2016-2021



** Includes sugar free, no added sugar, reduced sugar, low sugar, no/low/reduced calorie claims*
Source: Innova Market Insights, 2016-2021

Fastest growing sweeteners

CAGR 2016-2021



Source: Innova, Food & Beverage product launches, Europe, 2016-2021

But meeting sugar-reduction targets is just the beginning. Sugars play a key role in formulation, influencing not only taste but also appearance, physical and textural attributes, shelf life and more. Determining which sweetener to use depends on many factors, including product application, ingredient availability, price, regulatory requirements, and consumer perceptions.

Following the same trend as sucrose, among artificial sweeteners, only sucralose is seeing increased use. Others, such as acesulfame-K and aspartame, continue to decline in popularity, when it comes to new product applications.While sugars and artificial sweeteners have lost favor with consumers, there are sweetening solutions that fare better.[1]

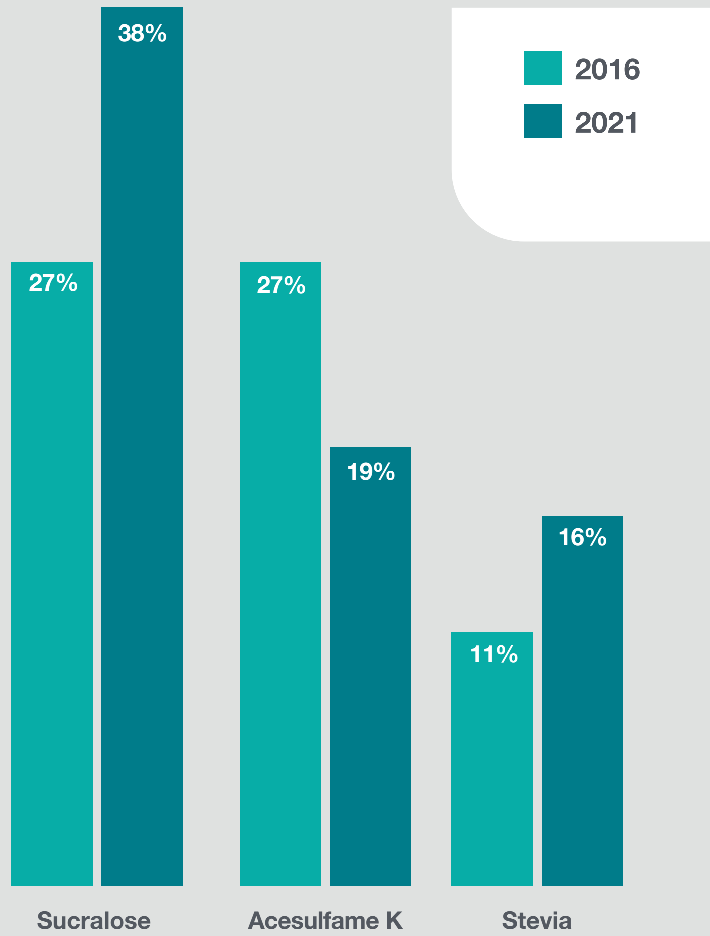
Stevia sweeteners have a lot going for it from a product development standpoint, as well as with consumers. Not only does have the ability to deliver up to 300 times the sweetness of sucrose but it also contains zero calories.

Lower-calorie polyols are also finding a place in the sugar reduction space. With just 2.4 kilocalories per gram, they can help replace both the bulk and sweetness of sugar. They are tooth friendly, allowing dental health claims in the EU and they work well in synergy with high-intensity sweeteners.

The shift in consumer attitudes towards more natural alternatives has been a boon for sweeteners like stevia and erythritol. Across the food and beverage landscape, erythritol ranks as one of the fastest growing sweeteners, with European launches more than quadrupling since 2016.

Most used sugars and sweeteners in sugar reduction

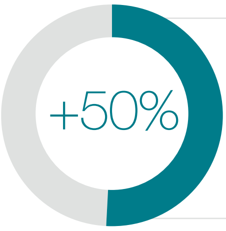
2016-2021



Source: Innova Market Insights, 2016-2021

Dig into erythritol's sugar-reduction resume, and it's easy to understand the sweetener's growing fan base. A naturally occurring sweetener, erythritol is found in fruits such as grapes and pears, as well as fermented foods and beverages like wine, beer and soy sauce. It looks and tastes like sugar but without the calories, making it a great fit for manufacturers looking to reduce sugars and avoid artificial sweeteners.

Erythritol is produced via the old-age process of fermentation from corn, making it a good choice for consumers looking for more natural ingredients. Erythritol's clean, sweet taste is a big reason for its growing popularity, but the zero-calorie sweetener brings a range of other benefits, too. Among other benefits, it helps to add smoothness and body to reduced-sugar formulations, replacing sugar's bulk. It's also a great partner to stevia, masking off flavors, delivering more upfront sweetness and providing a rounder, more sugar-like sweetness profile.



More than 50% of new product development in food & beverages containing erythritol also contained stevia.

Source: Innova Market Insights, 2016-2021

ERYTHRITOL'S BENEFITS

Sugar like: clean taste, adds smoothness & body

Zero calories

Tooth friendly & non cariogenic

Suitable for people with diabetes

Synergies with stevia: masks off flavors, cooling sensation

Produced by a natural fermentation process

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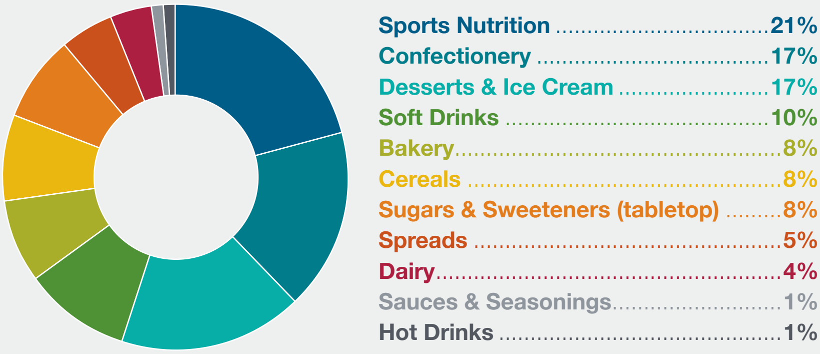
Category focus

While erythritol can be found in applications from confectionery to spreads, most of the new product launches are in the sports nutrition category.

On the European stage, 21% of erythritol used between 2016 and 2021 was in sports nutrition.[1] Other key categories for product innovation with erythritol include Confectionery, Desserts & Ice Cream and Soft Drinks. Not surprisingly, these are all segments under pressure to reduce sugar content.

Top categories for erythritol



Source: Innova Market Insights, 2016-2021

Promises built around sugar content are front-and-center on most erythritol-containing products. Be it no-sugar-added, low-sugar or reduced-calorie, three in four (77%) make a sugar-related claim.* Links to broader health goals are also evident in many of the new erythritol entries. One in four (39%) carry a high/source of protein claim, nearly a third (29%) are gluten-free and 22% tout their vegan status.[1]

Top claims for European product launches containing erythritol

Source: Innova Market Insights, 2021

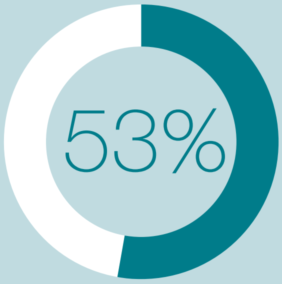
** Includes no-added-sugar, sugar-free, low-sugar and reduced-sugar claims*

Familiarity gap

It seems clear that health, diet and sugars reduction are closely linked in today's consumer psyche. Yet awareness for the solutions that make those low- and no-sugar products possible is remarkably low, especially compared to their full-calorie counterparts. Cargill's IngredienTracker™ research (2021) found a quarter (23%) of European consumers are familiar with erythritol – far lower than a staple like sugar. Yet greater familiarity doesn't always equate to greater acceptance. The study showed that familiarity does not necessarily mean consumers think an ingredient is healthy but unfamiliar ingredients are more consistently deemed unhealthy.

Artificial sweeteners such as acesulfame K and aspartame didn't fare much better, viewed poorly by 37% and 46% of consumers, respectively. In truth, many low- and no-calorie sweeteners included in the study were weighed down with negative net health perceptions.

Still, the survey did illuminate a few positive trends. A handful of sweeteners show steady improvement in their net health perception scores. Of these, erythritol was among the leaders, up 10 points since 2020. Further, pairing erythritol with consumer-favorite stevia – one of the few sweeteners to earn net positive marks – delivers a substantial improvement in both its perception and purchase impact scores.



53% of EMEA consumers say that having no artificial sweeteners is an extremely/very important statement on labels.

HealthFocus International, 2020

Familiarity & perceptions of sweeteners

	Ace-K	Aspartame	Erythritol	Stevia	Stevia + Erythritol
Familiarity:	18%	53%	23%	64%	31%
Net Health Perception:	↓-32%	↓-28%	↓-19%	↑+22%	↓-13%

Source: Cargill IngredienTracker™ proprietary research, 2021

+10%

Net Health Perception has improved by 10% since 2020.

Adding Stevia with Erythritol had a positive impact on the overall Net Health Perception.

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Our solutions

Consumers' heightened interest in healthier food and beverages coupled with increase scrutiny of ingredients have created new formulation challenges. Cargill offers an extensive range of nature-derived sweetness solutions that can help product developers navigate the do's and don'ts of today's formulation realities while still delivering products brimming with great taste.

OUR SWEETNESS SOLUTIONS INCLUDE:

Cargill™ erythritol

A zero-calorie bulk sweetener that has a similar taste and functionality to sucrose. It is a great fit for manufacturers looking to reduce sugars in their products without compromising on taste and mouthfeel. Cargill™ erythritol is non-cariogenic and does not promote tooth decay, making it a great fit for products promoting oral health. As with all Cargill ingredients, the reliable quality and supply of Cargill™ erythritol is supported by Cargill's extensive supply chain.

Truvia® & ViaTech® stevia leaf extracts

Steviol glycoside is a high intensity sweetener, derived from the stevia leaf that answers consumer demand for nature-derived, recognizable ingredients. Characterized by its high relative sweetness, it enables claimable sugar and calorie reduction as a single ingredient or in ingredient blends. Additionally, stevia is tooth-friendly and safe for use by diabetics.

Cargill's stevia portfolio includes Truvia®, a high purity Reb A stevia sweetener, and ViaTech® stevia leaf extracts, which are patented combinations of sweet stevia components, optimized for true sweet taste.

truvia ViaTech™

RECIPE: Protein Enriched Sports Cocoa Drink with more than 50% sugar reduction

Cargill™ erythritol & ViaTech® enable optimal sweetness with significant calorie reduction

Ingredients: Water, Sugar, Pea Protein, Cocoa Powder, Tricalcium Phosphate, Xanthan, Guar, Erythritol, Steviol Glycosides

Nutrition information	Amount per serving (100 ml)
Energy	58.20 kcal
Fat	0.27%
of which saturated	*0.25%*
Carbohydrates	3.63%
of which sugars	*2.42%*
Proteins	6.23%
Dietary fiber	1.08%
Salt	0.10%

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The Cargill advantage

It's clear that product formulators now have a multi-pronged mandate to offer great tasting products with less sugars, yet landing on a winning formula is no easy task. Regulatory constraints, calorie reduction goals, clean label expectations, cost implications and processing realities all add to the job complexity – yet consumer demands for great taste and texture remain unwavering. Cargill can help brands navigate these challenging waters, partnering with them to help identify the best sweetening solution for their unique product, market and consumer segment.

We offer a broad range of nature-derived sweetening solutions, with full-, low- and no-calorie options. Alongside erythritol and stevia, our portfolio includes cereal sweeteners and other polyols. In addition, we can help product developers replace sugar's bulk and functionality. **Bulking agents** like maltodextrins or soluble fibres can replace the mass and volume lost when sugar is removed. As an added benefit, fibres may also improve the nutritional profile of the final product. Further textural adjustments may be needed, and our extensive portfolio of texturizers, including starches, pectins and carrageenan can help address mouthfeel and other organoleptic issues.

Flexible supply chain

Given its versatility in various application, it is no surprise that demand for erythritol is rising. In response, Cargill has diversified our supply, with erythritol production capabilities in North America and a new supply stream from Asia, bringing added flexibility and increased reliability to our supply chain.

www.cargill.com/food-bev/emea/sweeteners/zerose-erythritol

By collaborating with Cargill, brands gain access to our broad ingredient toolbox, deep technical expertise, and proprietary consumer understanding, further supported by our nutrition, sensory and regulatory specialists.

Learn more about Cargill's sugar reduction ingredients and expertise at **cargill.com/food-beverage/emea/calorie-and-sugar-reduction**.

References

[1] *Innova Market Insights, 2016-2021*