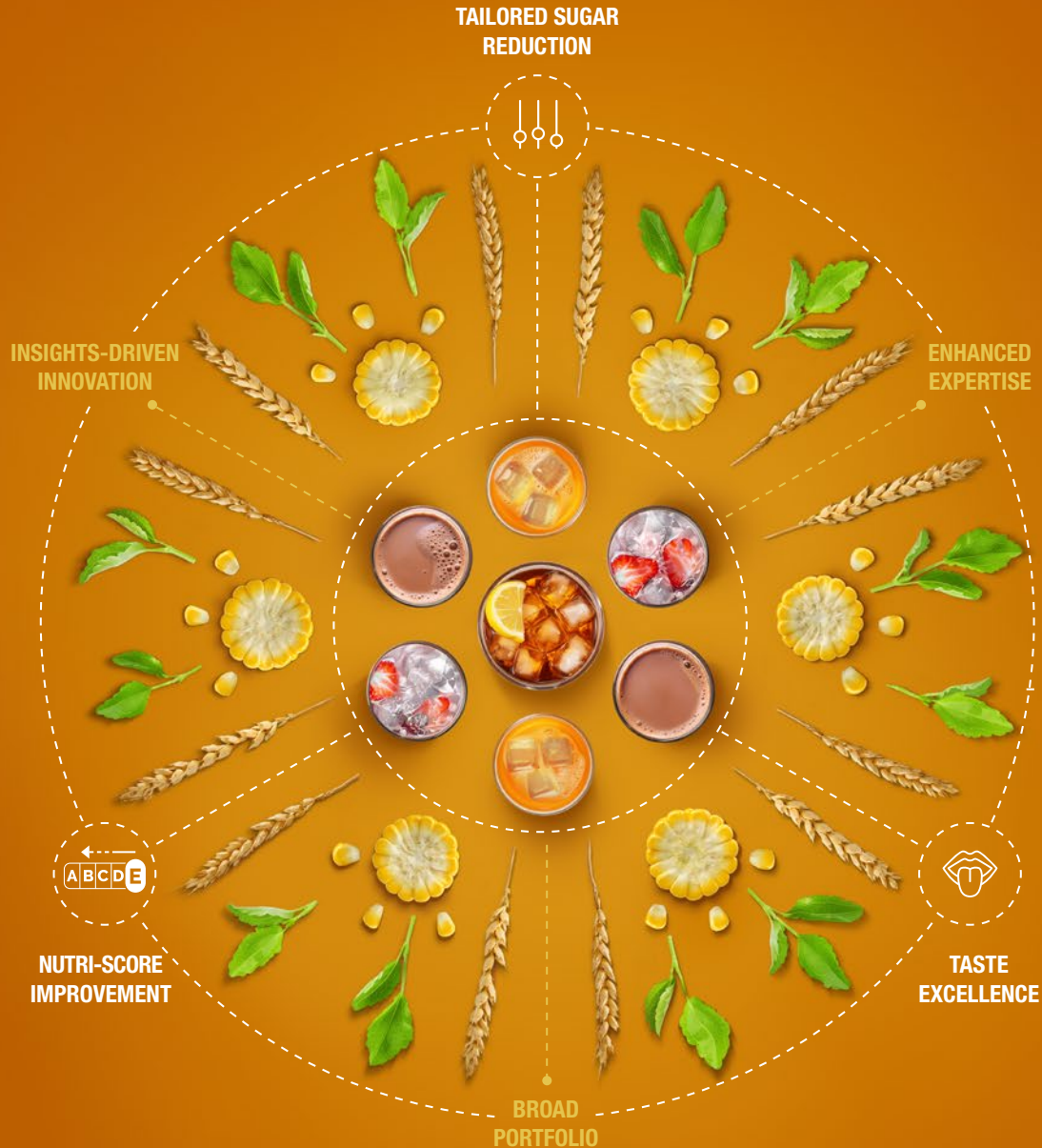


Mastering Sweet Success IN BEVERAGES



Let's co-create winning
sugar-reduced beverages



Table of contents

Sweet consumer insights



Sweet solutions

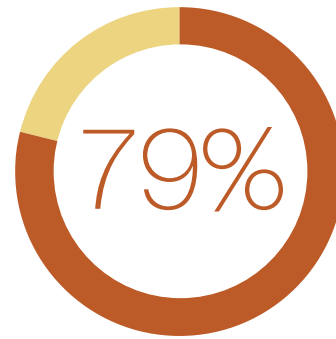


What's bubbling in beverages



Sweet consumer insights

Sugars have long been a staple in adding sweetness and improving product functionality. However, public authorities have introduced measures to motivate food and beverage manufacturers to reduce sugar content in their products. Consequently, consumers are reassessing their sugar intake, prompting brands across the industry to explore alternative sweeteners.



of consumers generally agree there are too many sugars in most packaged foods & beverages.

Source: Cargill proprietary research conducted with 3,082 consumers in France, Germany & UK, 2022.

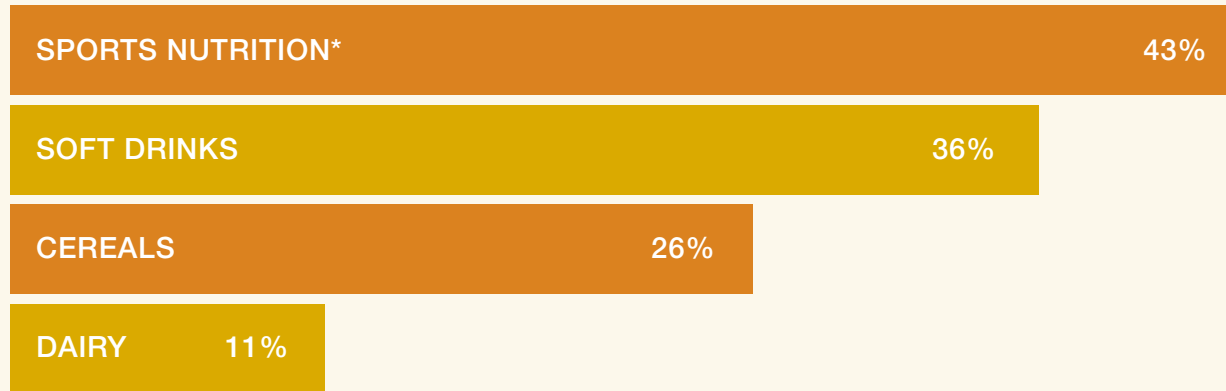


Beverages in the driving seat

Sugar reduction is prevalent across the food & beverages landscape, with the beverages category arguably driving this trend.¹ It is particularly notable within the carbonated beverages and sports nutrition space. In 2024², one in three beverage launches featured a sugar-related claim, highlighting the proliferation of this trend.

For beverage manufacturers, the trend is being propelled by both consumer demand and regulatory drivers.

Top F&B categories with sugars-related claims:



Source: Innova Market Insights, (2019 - 2024).

* Includes sports drinks RTD and sports protein based RTD, on top of sports bars and powders and supplements

¹ Euromonitor, F&B Categories Retail Sales Volumes for Europe (excluding Turkey and Russia) from 2019 to 2028 including "No Sugar", "Low Sugar" and "No Added Sugar".

² Innova Market Insights, 2024.

Did you know?

47% of consumers that generally avoid sugars, say they also avoid sugars in beverages.

35% of beverage consumers always buy No/Low Sugars products

Source: Cargill proprietary research conducted with 3,082 consumers in France, Germany & UK, 2022.



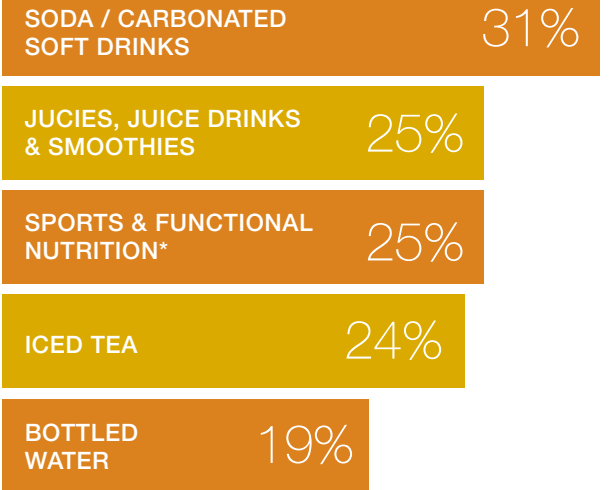
Consumer demand fuels sugars claims

As consumers become increasingly mindful of their food and beverage choices, sugar conscious consumption is on the rise, with beverages one of the top categories under scrutiny. According to a 2024 Innova Market Insights category survey, consumers in Europe are mostly influenced by sugar claims in the beverages category, specifically in the soda/carbonated soft drinks, juices & smoothies, sports drinks, and iced tea segments.

Besides simply trying to reduce sugars in their diet, health-conscious consumers are also scrutinizing the process in which sugar reduction is achieved. The conversation around artificial sweeteners is changing due to more unfavorable claims in the media around possible health effects. As such, consumer demand for nature-derived ingredients continues to grow as demonstrated by a 37% increase in stevia product launches in the last 5 years.³

In response to:

“Which claims most influence your purchasing decision when buying ‘F&B category’?”



* Includes sports drinks RTD and sports protein based RTD, on top of sports bars and powders and supplements.

Source: Innova Market Insights category survey 2024 (Average of Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Poland, Spain, Sweden, UK).

Consumer perceptions of stevia:



No calories



Environmentally sustainable



Safe



Natural



Healthy

Source: Cargill proprietary research 2022 (n = 3081, France, Germany, UK).



Almost 1 in 4 consumers consider stevia to be the most natural and healthy common sweetener.

Source: Innova Market Insights, Health & Nutrition Survey, 2004 (average: France, Germany and Spain).

³ Innova Market Insights, Food and beverage launches containing stevia, 2019 - 2023, Europe.

An evolving regulatory landscape

According to Innova Market Insights' "Now & Next in Global Sugar Reduction" report, taxes are associated with drops in purchases of sugar-sweetened drinks.

Katrijn Otten, Cargill's Government Relations Senior Director states: "The conversation around sugar taxes shows no signs of abating. In Europe, thirteen countries currently impose a tax on sugar-sweetened beverages, with more likely to follow. Furthermore, countries with existing taxes are considering potential tax rate changes."

In line with the World Health Organization's recommendation that both adults and children reduce their intake of free sugars to less than 10% of total energy intake, regulation has also grown around advertising food and beverage, including sugar-sweetened products, to children.

Beverage manufacturers have been actively working on reducing sugars in their products for many years.⁴ Underscoring its ongoing commitment, the European soft drinks sector industry group (UNESDA) published its 5-year strategy outlining its key strategies and policy priorities in February 2024. One of the three key ambitions entitled "Helping Europeans to lead healthier lifestyles" states: "This sector is committed to further supporting healthier lifestyles by reducing average sugar content in soft drinks."

But it's not all a sweet ride. Sugar-sweetened beverage consumption is still rising. On a worldwide scale, children and teens aged between 3-19 years consumed nearly 23% more sugar-sweetened beverages in 2018 compared to 1990. Globally, young people are consuming on average, 3.4 servings per week.⁵

It's clear that the pressure is on for manufacturers to deliver sugar reduced beverages that meet consumer demand for healthier sweet satisfaction, while adhering to government health policies, guidelines and regulations.



Katrijn Otten
Cargill's Government
Relations Senior Director

The shifting regulatory landscape

Taxes are associated with drops in purchases of sugar-sweetened drinks*



WHO recommends reduction to <10% free sugars of total energy intake



UNESDA 5-year strategy outlines support for reduction of sugar content in soft drinks**



13 European countries with a tax on sugar sweetened beverages



30% sugar reduction required for a product to carry sugar-reduced claim

*Innova Market Insights' "Now & Next in Global Sugar Reduction"

** UNESDA is the representative body for the European soft drinks industry

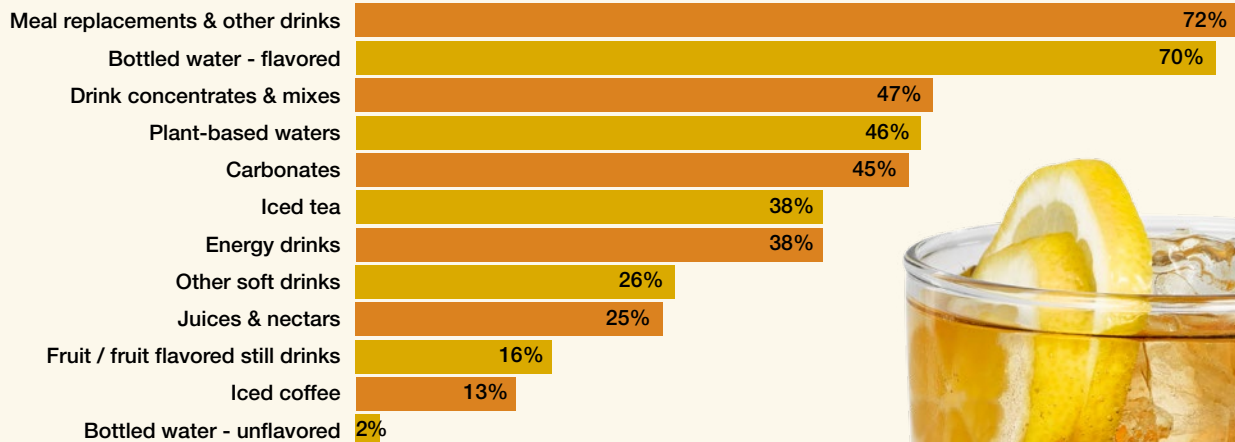
⁴ Soft drinks industry's sugar reduction commitments across Europe - UNESDA. ⁵ Global Dietary Database (GDD)

Impact on innovation

The shift towards healthier consumption habits, based on an increasing awareness of the effects of excessive consumption of sugars has prompted food manufacturers to reformulate their products, using more natural alternatives and new technologies to reduce the sugars content.⁶ And with 1 in 3 European soft drink launches in 2024 including a sugar-related claim, there are no signs of the trend abating.

For sweet success, it is critical for manufacturers to achieve the balance between reducing sugars and great tasting beverages. That's where Cargill steps in!

% of total segment launches with a sugar-related claim in Europe in 2024



Source: Innova Market Insights, 2024

⁶ Cargill proprietary research, Food & Beverage Trends, April 2024.



Top 3 segments for sugar-related claims

Sugar-related claims are most common in:

SPORTS DRINKS

49%
of launches

+8%
CAGR, Europe
2019-2023

CARBONATES

31%
of launches

+9%
CAGR, Europe
2019-2023

ICED TEA

27%
of launches

+7%
CAGR, Europe
2019-2023

Sweet solutions

Undoubtedly, sugar reduction is complex. Historically, taste limitations kept brands from delivering satisfying sugar-reduced beverages.

Leveraging our broad solutions portfolio, Cargill's beverages team helps brands overcome formulation challenges, enabling them to create enticing beverages that quench consumers' thirst for sugar-reduced options.

Leverage our expertise and portfolio of nature-derived solutions for sweet success.



Masters of sweet success

With more than 20 years of combined experience working in partnership with some of the leading beverage suppliers around the globe, our beverage application experts can help overcome formulation challenges around sugar reduction across the various sub applications. Furthermore, our customers can tap into Cargill's global R&D network and state-of-the-art facilities to ensure they are well positioned to deliver consumer-pleasing sugar-reduced beverages.



Julie De Vel
R&D Application
Specialist Beverages

“You always need to look at the entire beverage matrix when reformulating. A great tasting sugar reduced beverage needs to have the right dynamics of flavor and sweetness. Sugar is not only bringing the sweetness in a

drink but also gives body and mouthfeel. Reducing this bulk sweetener by a high potency one like stevia can bring some challenges with it. The loss of body and mouthfeel can be compensated by the use of the right bulking agents or texturizers.”



Wouter Van Beneden
R&D Senior Application
Specialist Beverages

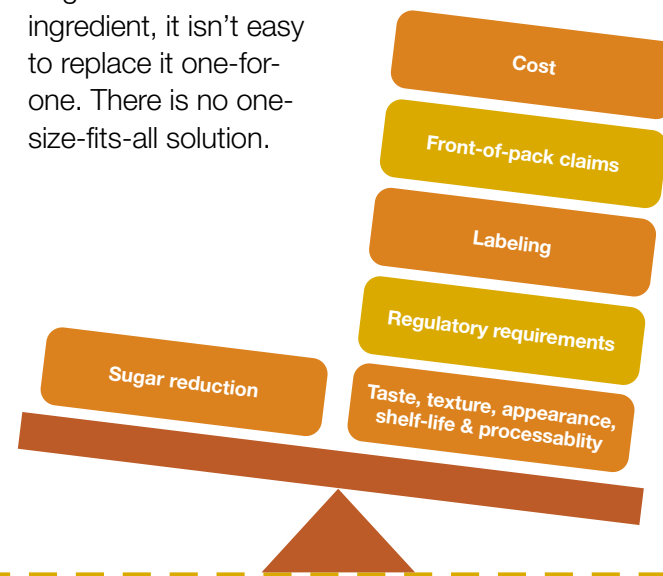
“There is not a one size fits all solution for reducing sugar. The different types of beverages have a different dynamic of flavor and sweetness. Because of its high potency, a small difference of a couple of parts per million

(ppm) stevia can make the difference between a great tasting beverage and an average one. It's key to find the right sweet/sour balance to make a refreshing drink. This means playing with the acids in the formulation can also help in getting to a great drink.”

THE SWEET CHALLENGE

Cutting out sugars isn't as easy as it seems!

Sugar is such a versatile ingredient, it isn't easy to replace it one-for-one. There is no one-size-fits-all solution.



Solutions for sweet success

Cargill is the go-to solutions provider for both overall sweetness and sugar reduction in beverages. We offer one of the broadest sweetness portfolios, ranging from full- to no-calorie options, and high intensity sweeteners to offer choice to customers and consumers. Whether you're creating a new, full-sugar product or (re-)formulating for balanced nutrition, we offer a complete toolbox of solutions for sweet success.

One-stop-shop for sugar reduction

SWEETENERS

- ✓ **Full-calorie sweeteners**
 - Fructose syrup
 - Low DE glucose syrup
- ✓ **Full portfolio of polyols**
 - Isomalt
 - Mannitol
 - Maltitol
 - Sorbitol
 - Erythritol
- ✓ **High intensity sweeteners**
 - Steviol glycosides from stevia
 - Steviol glycosides from fermentation

BUILD BACK SOLUTIONS

- ✓ **Fibers**
 - Soluble corn & wheat fiber
 - Citrus fiber
- ✓ **Starches & Derivatives**
 - Native and modified
 - Maltodextrin
- ✓ **Pectin, carrageenan & seaweed**



Stevia in the spotlight



Stevia is a great fit for consumers looking to limit calories from added sugars and at the same time move away from artificial alternatives.

That's why for beverages, the focus is on our stevia portfolio; ViaTech®, Truvia® and our latest innovation, EverSweet®.*

Cargill's stevia innovation journey started in 2011, when we launched Truvia® Reb A. Subsequently, we developed a proprietary taste prediction model, enabling us to precisely predict which combination of sweet compounds are expected to deliver optimal taste and sweetness in a given application – using this insight to create our ViaTech® stevia sweeteners.

EverSweet® is the next step in our journey, enabling deeper sugar reduction in beverages than previously possible with other stevia sweeteners.

truvia

- ✓ High purity Reb A
- ✓ Cost-effective
- ✓ Sugar reduction up to 3 SEV
- ✓ FSA 3.0 Silver benchmark

ViaTech

- ✓ Proprietary blend of steviol glycosides
- ✓ Sugar reduction up to 6 SEV
- ✓ FSA 3.0 Silver benchmark

EverSweet®
Stevia Sweetener

- ✓ Reb M and D from fermentation
- ✓ Sugar reduction up to 8 SEV
- ✓ Strong sustainability story

Steviol glycosides from stevia

Steviol glycosides from fermentation

Meet EverSweet®

EverSweet®*, our next-generation stevia sweetener, uses advanced fermentation techniques to bring to life stevia's sweetest elements – steviol glycosides Reb M and Reb D. With EverSweet®, you can make significant sugar reductions to your food or beverage formulations without compromising on taste.**



Optimized taste & sweetness



Deeper sugar reduction



Cost-effective



Strong sustainability story

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

**EverSweet is now available in the UK and will soon be available in the EU.

SEV: sweetness equivalent value
 SR: sugar reduction
 NAS: no added sugar

Score sweet success with Cargill's portfolio

All recipes can be combined with erythritol!



	Flavored waters	Iced tea	Lemon / Orange Soft Drinks	Cola	Energy Drinks	Rehydration drinks
Typical added SEV	4-5	7-8	8-10	10-11	11-12	5-10
Levels of sugar reduction possible with our solutions	Up to no added sugar	Up to no added sugar	Up to no added sugar	50-70% sugar reduced	50-70% sugar reduced	Up to no added sugar
Optimal solution	Full stevia range	ViaTech® (SR) or EverSweet® (NAS)	ViaTech® (SR) or EverSweet® (NAS)	EverSweet®	EverSweet®	EverSweet®

Discover more about how EverSweet® can make your beverage a sweet success.

Erythritol in the spotlight

A key ingredient for manufacturers wishing to achieve sugar reduction in beverages, erythritol offers a clean sugar-like taste, and works well with high intensity sweeteners. It has a functionality close to sucrose but without the calories. This enables both sugars and calorie reduction, all while maintaining body and mouthfeel. In combination with EverSweet®, it contributes to a high performing solution for sugars reduction up to 8 SEV.



Julie De Vel
 R&D Application
 Specialist Beverages

“Erythritol is a very good match with stevia as it can boost your sugar reduced beverage. Erythritol brings a little bit of sweetness, but it also can mask some of the sweetness linger of stevia. Next to that it provides some bulk so helps with the body and mouthfeel of your drink.”

2x

The fastest growing sweetener in Europe with 2x more launches with erythritol since 2019.

Source: Innova, Food & beverage launches containing erythritol, 2019-2023.

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

What's bubbling in beverages?

The rise of several generations of stevia-based sweeteners has enabled innovation in sugar reduction levels. This is enabling Cargill's beverage applications experts to push the boundaries when it comes to sugar-reduced soft drinks. Whatever the requirements, through our expertise and sweetness portfolio we offer our customers a complete toolbox of solutions to help reach their sugar reduction goals.

That's why our experts created several sweet beverage recipes to demonstrate how, together with our customers, we can master sweet success.

Hero ingredients for sugar reduction in beverages

Stevia solutions

ViaTech®, Truvia® and our latest next-gen stevia sweetener, EverSweet®.

Zerose® Erythritol

Erythritol is a zero-calorie polyol that has a clean taste and packs a functionality close to sugar.





Iced tea

Traditional iced tea often packs 7-8% sugar, but we're revolutionizing your favorite drink. By reducing sugar levels or eliminating them entirely with stevia sweeteners, we can deliver a perfectly balanced, refreshing beverage that complements the tea's unique flavor profile, and astringency.

Experience a **65% reduction in sugar** content with our innovative blend of **ViaTech® TS300** and **Zerose® erythritol**. Join the trend with one of the fastest-growing sweeteners on the market, featured in over half of all new soft drink launches with sugar-related claims.⁷

And it doesn't stop there! With the launch of EverSweet®, it is now possible to go completely sugar-free by using a single high-intensity sweetener.

INGREDIENT SPOTLIGHT

- ✓ ViaTech® TS300
- ✓ Zerose® erythritol
- ✓ EverSweet®



1 in 4 consumers are influenced by sugar-related claims in this segment.

Source: Innova Market Insights, 2024



⁷ Innova Market Insights, 2024

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

SweetLite Iced Tea

Ingredients

Water
Sugar
Zerose® 16952
Citric acid
Flavoring
Tea powder extract
Trisodium citrate
ViaTech® TS300

Nutritional information

Amount (g) per 100ml	Sugar reduced	Sugar reference
Energy	26 kJ / 6 kcal	113 kJ / 27 kcal
Fats	<0.5	<0.5
<i>of which saturated</i>	<0.1	<0.1
Carbohydrates	2.5	6.6
<i>of which sugars</i>	1.4	6.6
<i>of which polyols</i>	1.0	0.0
Dietary fibers	0.01	0.01
Proteins	<0.5	<0.5
Salt (mg)	<0.013	<0.013

**Combination of
ViaTech® TS300 &
Zerose® erythritol**

- ✓ Minimum 65% sugar reduction
- ✓ Low in calories
- ✓ Great flavors thanks to synergies between stevia sweeteners and erythritol



Claims are subject to local regulation and it is the customer's responsibility to verify compliance.

PeachPerfect Iced Tea

Ingredients

Water
Citric acid (50%)
Tea powder extract
Trisodium citrate
Flavoring
EverSweet®

Nutritional information

Amount (g) per 100ml	Sugar reduced	Sugar reference
Energy	2 kJ / 0 kcal	113 kJ / 27 kcal
Fats	<0.5	<0.5
<i>of which saturated</i>	<0.1	<0.1
Carbohydrates	0.5	6.6
<i>of which sugars</i>	<0.01	6.6
Dietary fibers	0.01	0.01
Proteins	<0.5	<0.5
Salt (mg)	<0.013	<0.013



EverSweet®

- ✓ Up to no added sugar
- ✓ Delicious calorie free sweetness
- ✓ Cost effective with strong sustainability story

EverSweet® is a product of Avansya, a joint venture between Cargill and dsm-firmenich. Claims are subject to local regulation and it is the customer's responsibility to verify compliance.



Carbonates

Traditional full sugar carbonated soft drinks (CSDs), typically contain 10-11% sugar, with the use of juice in some markets helping to reduce the added sugar levels somewhat.

Revolutionize your carbonates with EverSweet® and Zerose® erythritol!

Stevia sweeteners are the perfect solution for creating delicious, zero-sugar carbonated soft drinks. With EverSweet®, you can achieve an excellent tasting zero-sugar drink. And for those aiming to replicate the full-sugar experience, adding Zerose® erythritol enhances the mouthfeel, delivering a satisfying and refreshing beverage.

31% of launches included a sugar-related claim (2019-2023)

Source: Innova Market Insights, 2024.

INGREDIENT SPOTLIGHT

- ✓ EverSweet®
- ✓ Zerose® erythritol



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

Orange spark zero

Ingredients

Water
Zerose® 16952
Orange compound
Orange concentrate
Citric acid (50%)
Malic acid
Trisodium citrate
EverSweet®

Nutritional information

Amount (g) per 100ml	Sugar reduced	Sugar reference
Energy	11 kJ / 3 kcal	172 kJ / 41 kcal
Fats	<0.5	<0.5
<i>of which saturated</i>	<0.1	<0.1
Carbohydrates	2.1	9.9
<i>of which sugars</i>	0.49	9.9
<i>of which polyols</i>	1.6	0.0
Dietary fibers	0.02	0.02
Proteins	<0.5	<0.5
Salt (mg)	<0.0125	<0.0125

Combination of EverSweet® & Zerose® erythritol

- ✓ Up to no added sugar
- ✓ Low in calories
- ✓ Great flavors thanks to synergies between the stevia from fermentation and erythritol

EverSweet® is a product of Avansya, a joint venture between Cargill and dsm-firmenich.
Claims are subject to local regulation and it is the customer's responsibility to verify compliance.





Sports drinks

Typical isotonic sports drinks contain around 6.5% sugar, just above the 5% threshold for sugar tax in key markets like the UK. This is marginally above the 5% sugar level band at which a sugar tax applies in key markets, including the UK. Additionally, since the price of sugar remains high, providing a slightly different formulation can result in some cost efficiency.

That's why our experts have developed an isotonic drink using glucose-fructose syrup (C*TruSweet™ 01750). This syrup requires less quantity than sugar to achieve the same isotonicity due to its glucose and fructose molecules. To maintain sweetness, we incorporate a stevia sweetener (ViaTech® TS1200).

Optimize your isotonic sports drink with C*TruSweet™ 01750 and ViaTech® TS1200!

INGREDIENT SPOTLIGHT

✓ ViaTech® TS1200

✓ C*TruSweet™ 01750



>50%

RTD sports drink launches feature sugar-related claims (2019-2023)

Source: Innova Market Insights, 2024.



HydraLite

Ingredients

Water
C*TruSweet™ 01750
Electrolytes
Ascorbic Acid
ViaTech™ TS1200
Flavor emulsion

Nutritional information

Amount (g) per 100ml	Sugar reduced	Sugar reference
Energy	70 kJ / 17 kcal	109 kJ / 26 kcal
Fats	< 0.5	< 0.5
<i>of which saturated</i>	< 0.1	< 0.1
Carbohydrates	4.1	6.3
<i>of which sugars</i>	4.0	6.0
Dietary fibers	0.0	0.0
Proteins	< 0.5	< 0.5
Salt (mg)	0.013	0.013

**ViaTech® TS1200 &
C*TruSweet™ 01750**

- ✓ 30% sugar reduction without compromising on taste
- ✓ Supports optimum hydration
- ✓ Quick sweetness onset
- ✓ Cost efficiencies



EverSweet® is a product of Avansya, a joint venture between Cargill and dsm-firmenich.
Claims are subject to local regulation and it is the customer's responsibility to verify compliance.

Sugar reduction is here to stay

The pressure for beverage manufacturers to reduce sugars will only increase, driven by the ongoing negative impact of calorie overconsumption on public health. In this environment, sweetener choices will face heightened scrutiny, with consumers favoring products made from nature-derived ingredients that offer lower calories and sugars content, without sacrificing taste.

By partnering with Cargill, manufacturers gain access to our broad solutions portfolio, deep technical expertise, and proprietary consumer understanding, further supported by our nutrition, sensory and regulatory specialists.

Partner with Cargill and let's master sweet success in beverages together!

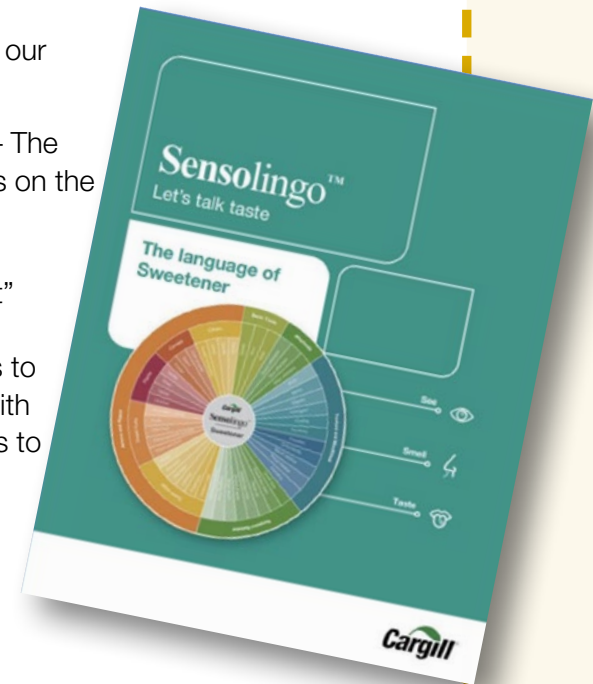
[Learn more at Sugar Reduction | Food Solutions EMEA | Cargill](#)

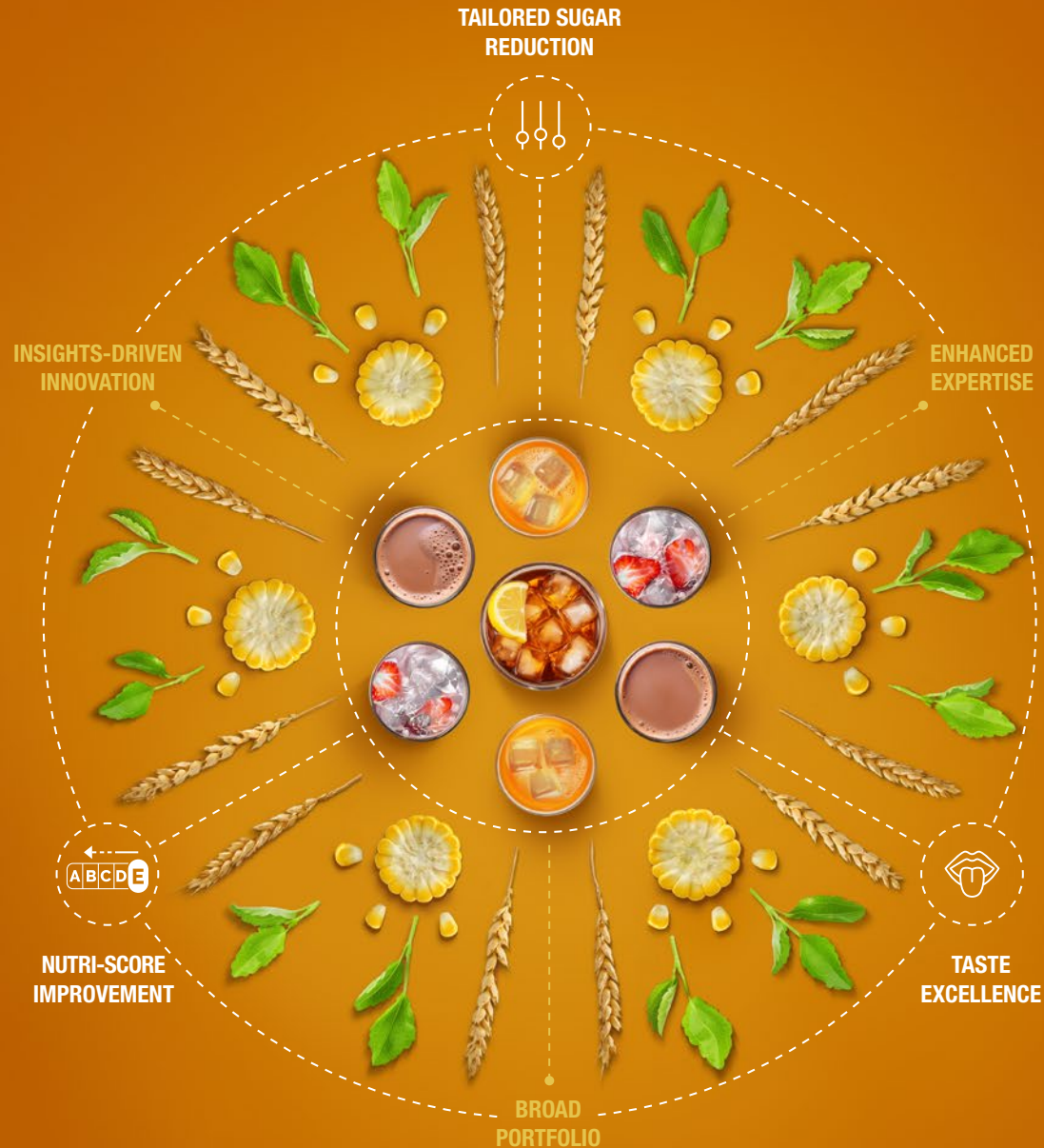


Sensolingo™ is a harmonized sensory language. Developed by Cargill's Global Sensory & Consumer Science team, it ensures clear and consistent communication on sensory product characteristics across Cargill and with our customers.

The platform includes “Sensolingo™ – The language of sweeteners.” This focuses on the sensory characteristics of sugars and sweeteners in all categories to ensure that we are speaking the same “sweet” language as you, our customers. Our expertise and advanced tools allow us to explore these characteristics further with you, so that we can tailor our products to meet your expectations.

Let's dive deeper into the world of sweeteners together and create the perfect balance of flavor and texture!





The information in this booklet is believed to be true and accurate. However, all statements, recommendations or suggestions are made without guarantee, express or implied, on our part. WE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE and FREEDOM FROM INFRINGEMENT.

The information presented herein is intended to illustrate the possible technical applications of our products. However, since the use of this information and our products is beyond our control, any recommendations or suggestions are made without guarantee of warranty in each country and particularly in the absence of patent rights. In addition, we recommend that the user ensures that this product is in compliance with the local regulations in force, particularly in the country where the finished product is to be consumed. It is the responsibility of the user to comply with the patents and the regulations in force.

