



**REDsugar**

Functional solutions for sugar reduction in beverages

---

# Content

What is sugar?

Impacts of sugar on the human body

War on sugar - Political framework

Consumer insights & changing behaviour

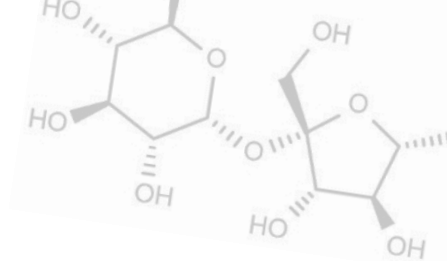
Sweet taste and less sugar - Replacement or reformulation?

Market insights - Beverage segment

REDsugar - Functional solutions for sugar reduction in beverages

Contact

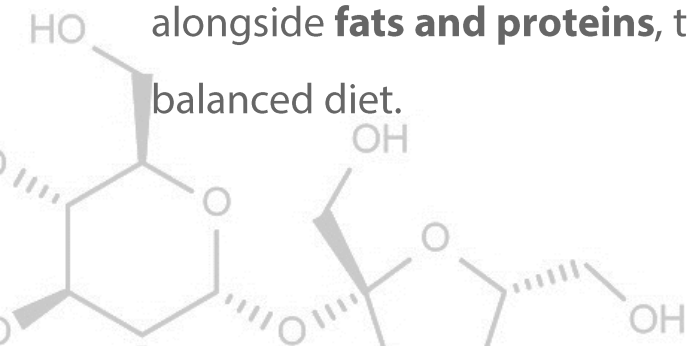
# What is sugar?



Known by its chemical name **sucrose**, sugar is produced **naturally** in all plants, including **fruits, vegetables** and **even nuts**.

Sucrose contains just **two molecules**: glucose and fructose, bound together by mother nature.

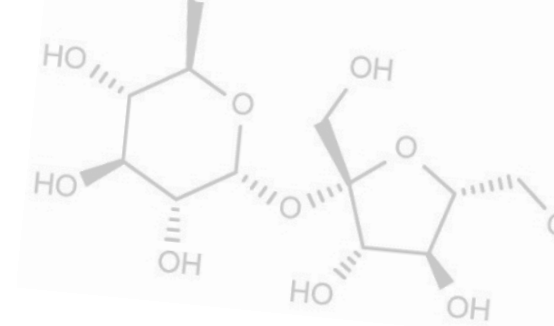
From the scientific point of view, sucrose is considered to be a **carbohydrate** which is one of the **basic food groups** alongside **fats and proteins**, that are **important** for a balanced diet.



## Sugar's technological functionalities in the food and beverage industry:

- Sweetener
- Preservative
- Texture modifier
- Fermentation substrate
- Colouring agent
- Bulking

# Impacts of Sugar on the Human Body



- Sugar is a **quickly available source of energy** due to its molecular characteristics and therefore **reduces hunger** within a very short time.
- Sugary-sweet **tastes** initiate various processes in the brain that release hormones **creating happiness**.
- Sugar consumption basically influences **motivation** and **hedonic systems** in human brains. This encourages **food intake**, which is a **liability** in **current environments**, where highly caloric and processed foods are available anytime in huge varieties.
- **Serious consequences** in modern societies, especially **obesity** with its well-known **side-effects** Diabetes Type 2, hypertension or coronary heart diseases may have their roots in high sugar consumption.



# War on Sugar - Political Framework

Following **World Health Organization's** (WHO) **publication** „Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020“, numerous countries have globally set up plans for **health taxes** or have introduced them in the meanwhile.

Moving away from the traditional fiscal motivation, health taxes, e.g. for sugar, salt or fat, aim to **reduce obesity** as well as **increasing levels of diabetes**.



**Sugar policies in Western Europe:** France, the UK and Ireland have introduced sugar taxes on sugar-sweetened beverages in 2018, whereas governments in Germany and the Netherlands are still working on alternatives alongside the legal level.

# War on Sugar - Political Framework

**UK & Ireland** have introduced a sliding levy on sugar-sweetened beverages in 2018.

**France** has banned free refills of fizzy drinks in restaurants and has a soda tax since 2013.

In 2017 and 2018, **Spain and Portugal** have put a tax on sugar-sweetened beverages.

**Norway** has updated its tax on sugar-sweetened beverages and food in 2018.

**Denmark and Finland** introduced a nutrition tax on beverages and sweets that did not succeed and was abolished.

**Germany and the Netherlands** have not passed laws, but are working on alternative solutions.

# Consumer insights & changing behaviour

**Health and Wellness** aspects have been the **main driver** for new product launches in recent years.

Consumers have become increasingly **health conscious** and push boundaries in new product developments based on better-for-you attributes.

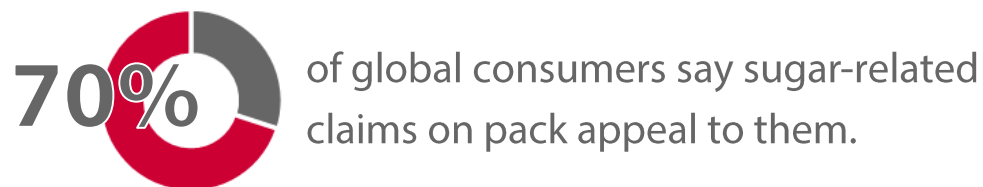
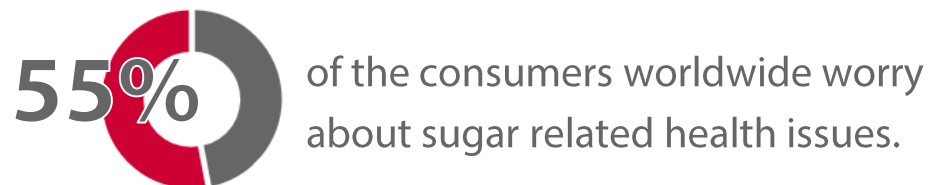
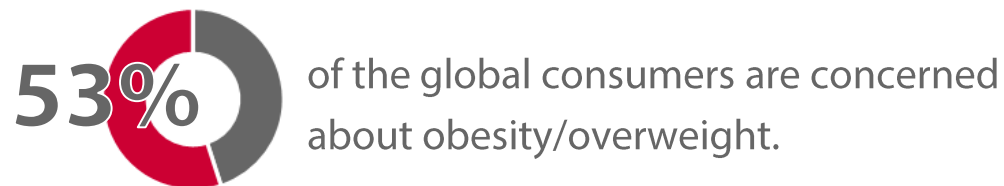


Today's consumers demand **pure and natural products** in food and beverage categories focussing on transparency and simplicity of ingredients. While **indulgence** remains the main topic when talking about sweet treats and soft drinks, **moderate consumption** or occasional **avoidance** have become common, but **major compromises on taste are not well accepted**.

# Consumer insights & changing behaviour

**Consumers are actively cutting down on sugar, primarily driven by health concerns.**

In recent years sugar has surpassed fat as the **top food villain** in our diets. People are more aware of sugar than fat on a daily basis.





# Consumer insights & changing behaviour

## Naturalness is consumers' top priority

Consumers prefer a **natural based sugar-reducing solution** over a zero-sugar option using artificial sweeteners.

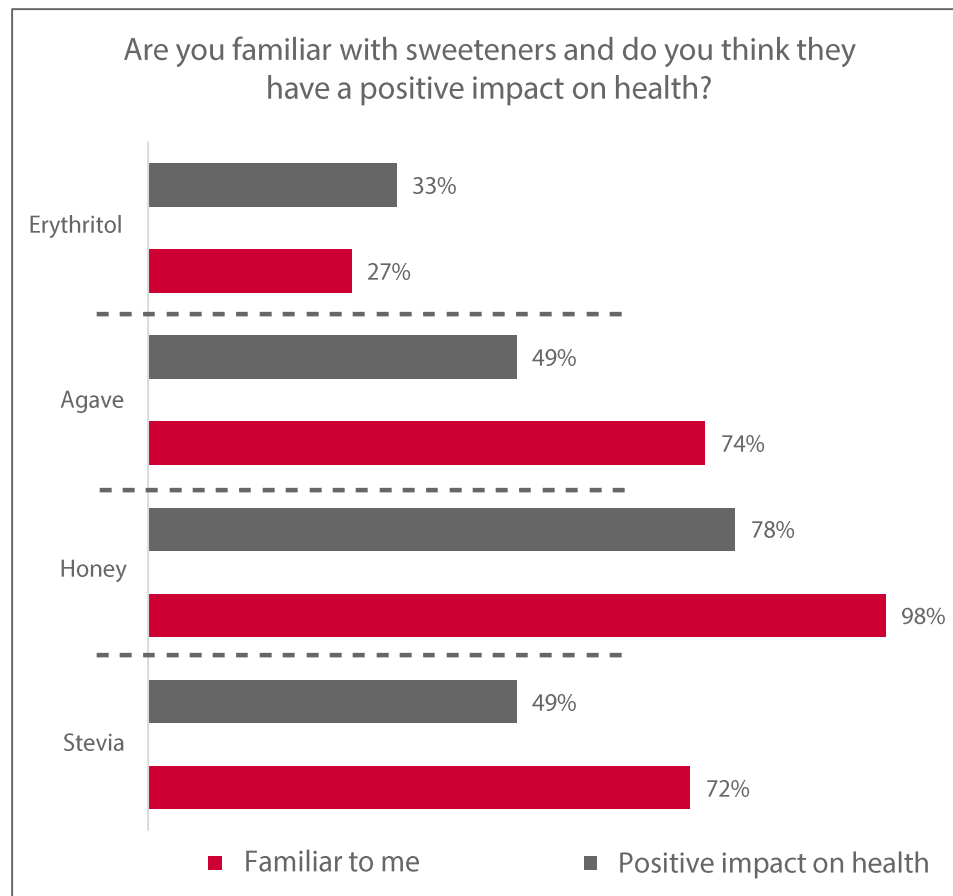
- 87% of global consumers pay attention to sugar, sweeteners or related claims when choosing food and drinks.
- Sensory appealing products, especially in terms of taste and mouthfeel, are key.
- Consumers are very likely to accept a combination of less sugar and natural sweeteners over a sugar free, but artificially sweetened, formula.

### Top 5 sugar/sweetener claims when deciding for food and drinks\*



# Consumer insights & changing behaviour

## Consumers' perception on sweeteners



**Sugar alcohols**, e.g. Erythritol, are natural and lower in calories, but are not very well accepted by the consumer.

**Honey** and **agave** have a positive, healthy image in total, but using them to reformulate sugar does not reduce the overall sugar content of food and beverages.

**Stevia** is a sugar-free, natural ingredient well suited to substitute sugar on industrial scale, meeting current market needs. Among consumers globally, it is well-known and widely perceived as healthy.

# Sweet taste and less sugar - Replacement or reformulation?

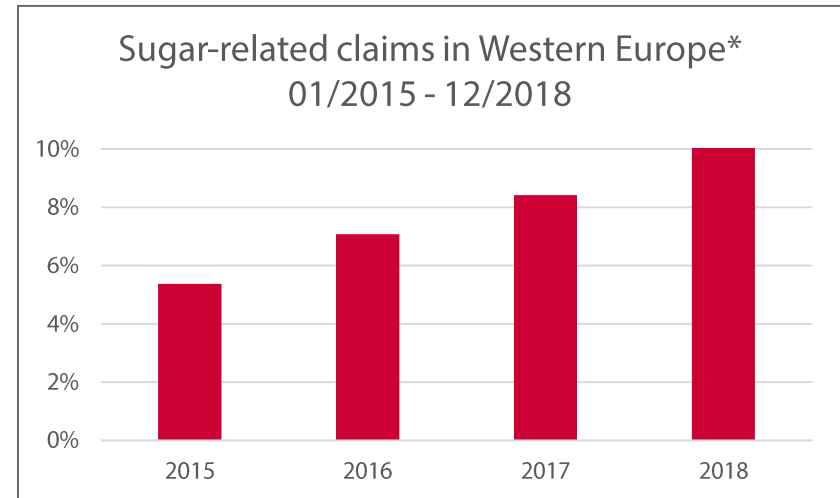
Among other categories, **soft drinks** are **directly affected** by the sugar tax and the growing concern about sugar intake. In recent years, manufacturers have already taken action and launched numerous products that contain artificial sweeteners. However, a **solution based on natural raw material** is of great importance in order to meet today's **consumer demands**.



**Sugar reduction** concerns are likely to **expand** into other categories, such as **confectionery & desserts** and **dairy products**. While sugar has a **functional role** within these applications, it may not only be substituted as such but the whole product needs to be **reformulated**.

# Sweet taste and less sugar - Replacement or reformulation?

New product developments are already spreading the market in Western Europe: **Sugar-related claims** on pack of non-alcoholic beverages, dairy products and desserts & ice cream have **increased by 100%** between January 2015 and December 2018, in total.



“Low/Reduced Sugar” as a claim on pack has increased by 138%, while “sugar free” products have decreased by 12% from 2016 to 2018 in Western Europe.

This market development indicates that the food and beverage industry has been working on **reformulations that keep some amount of sugar** instead of replacing it by zero-calorie artificial sweeteners.

## Market insights – Beverages

Within the beverage sector, **sugar taxes** have become a hot topic. Manufacturers are encouraged to reformulate their products and are constantly launching new products.

Especially when consuming soft drinks and near water products, health conscious consumers are critical about the overall sugar contents: A glass (250 ml) of coke (Coca Cola) or orange lemonade (Fanta) contains about eight cubes of sugar.

**Demand for sugar-reduced products within the beverage sector will therefore continue to rise, especially in Western Europe.**

New product launches for sugar-reduced beverages, **Western Europe** (01/2015 - 12/2018)

### Top Countries:

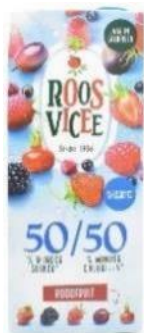
- |               |               |
|---------------|---------------|
| • UK          | • Ireland     |
| • France      | • Poland      |
| • Germany     | • Belgium     |
| • Netherlands | • Switzerland |
| • Norway      | • Denmark     |

### Top Claims:

- No added sugar
- Sugar free
- No/low/reduced sugar
- Ethical - environmentally package
- No/low/reduced calories



# Market insights – Beverages



## Netherlands, Roos Vicee

Roos Vicee 50/50 red fruit juice drink contains **50% less sugar** and less calories than similar drinks, and is free from artificial sweeteners.

- ✓ Juice & juice concentrates
- ✓ Sugar
- ✓ Flavouring



## UK, Britvic Soft Drinks

7Up Lemon and Lime has been reformulated and contains **30% less sugar** delivering a great refreshing taste.

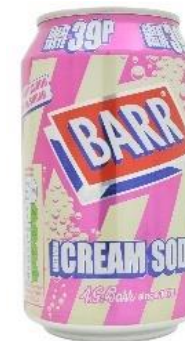
- ✓ Sugar
- ✓ Steviol Glycoside (sweetener)
- ✓ Natural x flavouring



## France, Société des Eaux de Volvic

Volvic Kids apple and strawberry flavoured Water contains **50% less sugar** than average of sweet drink for kids.

- ✓ Fruit juice & concentrate
- ✓ Sugar
- ✓ Natural flavouring



## Germany, A.C Barr

Barr American cream soda is full on flavour as well as **low in sugar** and made with sweeteners and sugar. of sweet drink for kids.

- ✓ Sugar
- ✓ Acesulfame Potassium, Aspartame (sweetener)
- ✓ Flavouring

# Sugar reduction challenges – Beverages

## What is the impact of reducing sugar in beverages?

Sugar as an ingredient in sweet beverages plays a significant role, as it provides body as well as mouthfeel to the product and brings technological advantages to the production process.

## A product with reduced sugar content therefore will be less appealing:

- Sugar naturally intensifies taste and smell in beverages, a reduction will bear sensory consequences
- The flavour used in the application might also change in its characteristics when sugar is reduced, leading to a modified overall taste perception
- A functional solution for closing the gap in mouthfeel and taste needs to be obtained



# REDsugar

## Functional solutions for sugar reduction in beverages

Sugar reduction is a hot topic, especially in Western Europe. Political frameworks aim to encourage reformulations in the food and beverage industry. Simultaneously, today's consumers are increasingly health-conscious and demand for new products with better-for-you attributes is rising.

Get in touch with taste and discover Bell's functional solutions for sugar reduction in beverages based on natural raw materials, meeting today's market needs and consumer expectations.



## REDsugar - Functional solutions for sugar reduction in beverages

We understand that every application requires different approaches in keeping the taste and the product appeal when reducing sugar. **We therefore applied our flavour house expertise in developing tailor-made flavour solutions that can be individually adapted to your specific needs, delivering intense, high-quality and satisfying product properties.**

**Bell's REDsugar** product line comprises natural flavouring substances, delivering a positive impact on the sweet perception in beverages.

**REDsugar flavours** comprise compositions of complex molecules delivering a positive impact on taste alongside texture and mouthfeel perception while especially sweetness of the final products is highlighted.

The sweet enhancing profile of Bell's **REDsugar** solutions can help to achieve at least **30% of sugar reduction** in certain applications.

**Natural flavouring declaration** assuring to be compliant with today's consumer expectations and clean label restrictions – no declaration as sweetener.

Functional solutions for reformulating beverages to meet the political frameworks in Western European countries.

Successfully tested in a variety of beverages taste profiles and applications including soft drinks, near water, flavoured water and ice tea.

**We are happy to provide regulatory support regarding the use of specific claims (e.g. stevia-related and clean labelling).**



# REDsugar - Functional solutions for sugar reduction in beverages

- **Bell's REDsugar** concept focuses on the market acceptance of sugar-reduced products. It provides **functional solutions** to reformulate beverages with regard to meeting naturalness, indulgence and sensory attributes to ensure today's consumer needs to be met.
- REDsugar includes a **building block system** especially developed to meet the needs of major flavour profiles in order to maintain **taste** alongside the **perception of texture and mouthfeel** in beverages that is created by the technological properties of sugar, increasing the level of sweetness and improving the overall taste of your beverage product.





# REDsugar solution for near water

## Apple profile

3550148

**Apple Flavour**

3350015

**REDsugar Fruit Flavour**

Carbonation g/l 0,0

°Brix refr. 2,0

As citric acid g/l 0,6

*Ingredients: Water, sugar, natural flavouring, acidifier malic acid*

- Improved fruity taste profile and sweetness perception
- Harmonic mouthfeel & texture
- Full taste experience
- Sugar characteristics successfully mimicked



### Declaration possibilities:

- Free from artificial sweeteners
- Free from sweeteners
- Low sugar // -50% sugar\*

# REDsugar solution for soft drinks

## Cola profile

0424066

Cola Additive

0426035

Cola Flavour

3350009

REDsugar Cola Flavour

Carbonation g/l 8,0

°Brix refr. 7,1

As citric acid g/l 0,7

*Ingredients: carbonated water, sugar, colour E 150d, acid phosphoric acid, natural flavouring, flavouring caffeine*



- Enhanced taste profile and sweetness perception
- Mouthfeel & texture rounded off by REDsugar solution
- Complete taste experience
- No “sugar gap”

### Declaration possibilities:

- Free from artificial sweeteners
- Free from sweeteners
- -30% sugar\*

# REDsugar solution for near water

## Apple profile – Tasting session

| 1. Near water apple profile<br>100 % sugar<br>+ 3550148 Apple Flavour | 2. Near water apple profile<br>-50 % sugar<br>+ 3550148 Apple Flavour | 3. Near water apple profile<br>-50 % sugar<br>+ 3550148 Apple Flavour<br>+ 3350015 REDsugar Fruit Flavour |
|---|---|---|
| <div></div> <div></div> <div></div> <div></div> <div></div>           | <div></div> <div></div> <div></div> <div></div> <div></div>           | <div></div> <div></div> <div></div> <div></div> <div></div>   |



# REDsugar solution for soft drinks

## Cola profile – Tasting session

| 1. Soft drink cola profile<br>100 % sugar<br>+ 0424066 Cola Additive<br>+ 0426035 Cola Flavour | 2. Soft drink cola profile<br>- 30 % sugar<br>+ 0424066 Cola Additive<br>+ 0426035 Cola Flavour | 3. Soft drink cola profile<br>- 30 % sugar<br>+ 0424066 Cola Additive<br>+ 0426035 Cola Flavour<br>+ 3350009 REDsugar Cola Flavour |
|--|---|--|
| <div></div> <div></div> <div></div> <div></div>  | <div></div> <div></div> <div></div> <div></div>   | <div></div> <div></div> <div></div> <div></div>  |



---

## Contact

Pui Yin Tao

**Marketing Specialist Sweet & Dairy**

Tel.: +49.341.9451.1056

Email: [p.tao@bell-europe.com](mailto:p.tao@bell-europe.com)

Bell Flavors & Fragrances

Schimmelstrasse 1

04205 Leipzig, Germany

[www.bell-europe.com](http://www.bell-europe.com)

