



**REDsugar**

Functional taste solutions for sugar reduction in sauces & condiments

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# Content

Impacts of sugar

War on sugar - Political framework

Consumer insights & changing behaviour

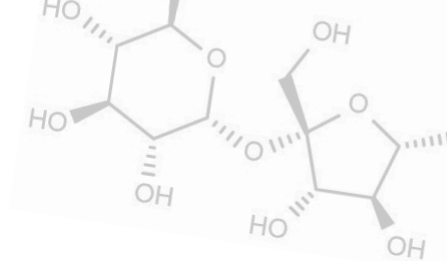
Harmonic taste and less sugar - Replacement or reformulation?

Market insights - Sauces & condiments

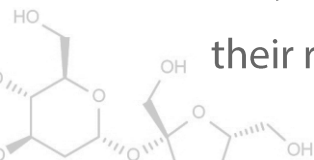
REDsugar - Functional taste solutions for sugar reduction in sauces & condiments

Contact

# Impacts of sugar



- Sugar is a **quickly available source of energy** due to its molecular characteristics and therefore **reduces hunger** within a very short time.
- 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.



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

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

# 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.

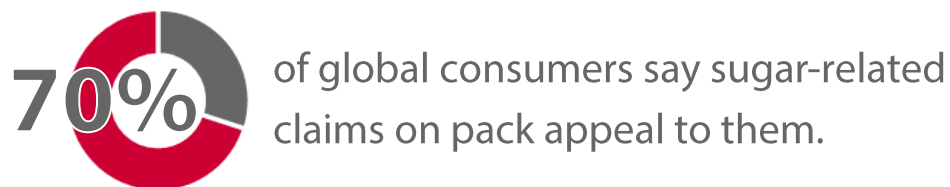
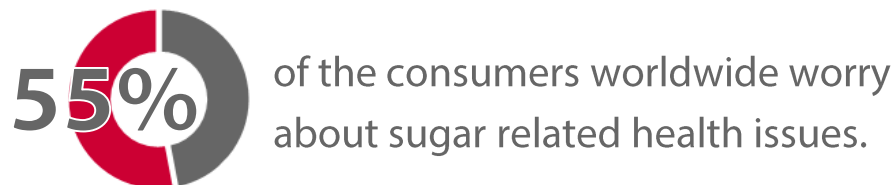
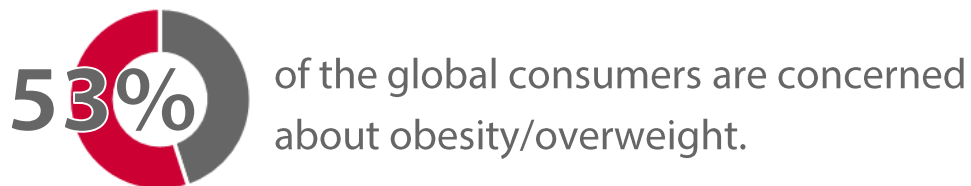


Today's consumers demand **pure and natural products** in food and beverage categories focussing on transparency and simplicity of ingredients. **Indulgence** remains the main topic, **moderate consumption** or occasional **avoidance** therefore have become common, but **major compromises on taste are 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.

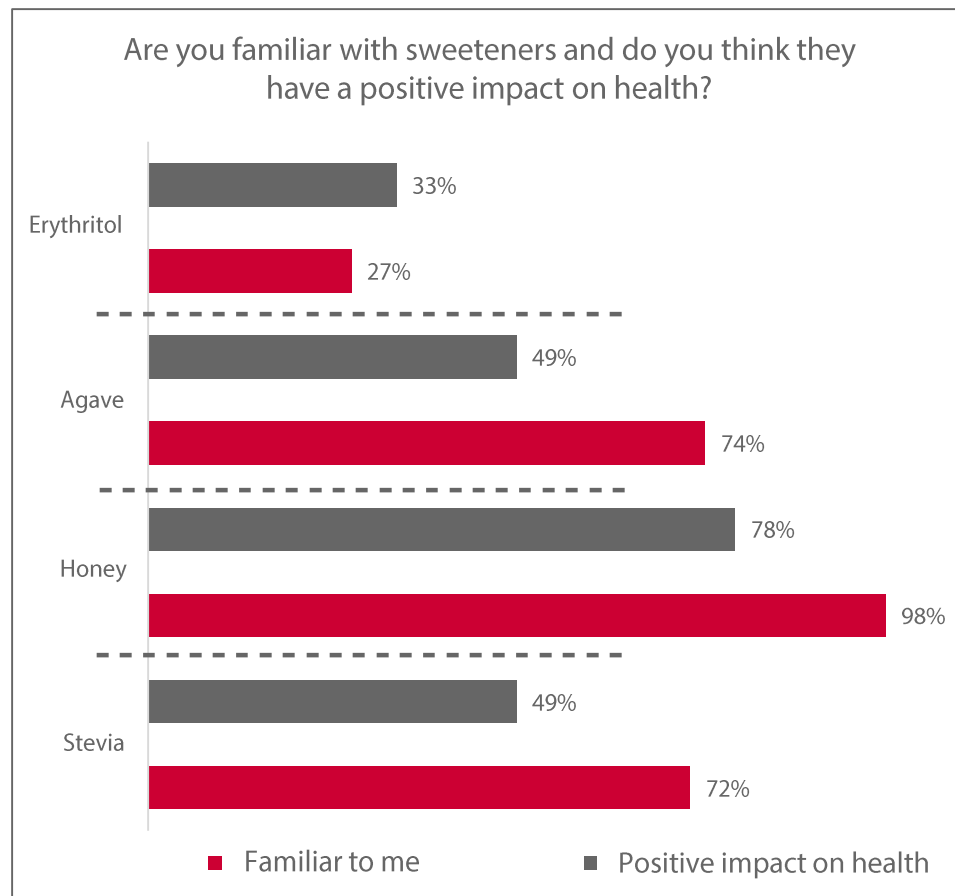
### Top 5 sugar/sweetener claims when deciding for food and drinks\*





# Consumer insights & changing behaviour

## Consumers' perception on sweeteners



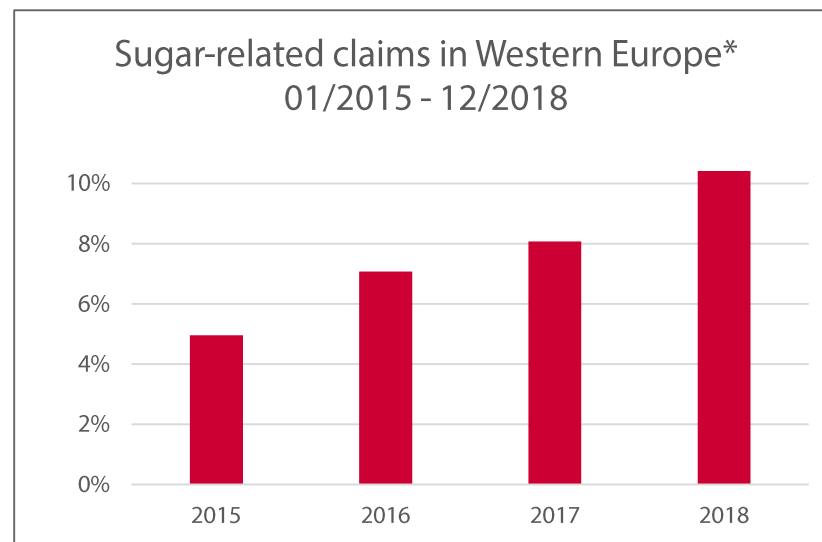
**Sugar alcohols**, e.g. Erythritol, are natural and lower in calories, but are not very well accepted by the consumer.

**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.

# Harmonic 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, desserts & ice cream as well as sauces & condiments have **increased by more than 100%** between January 2015 and December 2018, in total.



Within the sauces and condiments sector, the claim “sugar free” has been most prominent within the same time scale. Taking into account current consumer needs for naturalness and market developments in other categories, it is very likely that the industry will launch **reformulated products that keep some amount of sugar** instead of continuing with zero-calorie artificially sweetened ones in the near future.

# Market insights - Sauces & Condiments

Within the sauces and condiments segment, **sugar intake concerns** are most prominent in **ketchup** and **BBQ sauces**, due to their “hidden sugar content”.

Health conscious consumers are critical about the sugar used to round off savoury sauces and condiments: 100 ml ketchup (Heinz brand) contains about eight cubes of sugar while about eleven can be found in 100 ml BBQ sauce (Bull’s Eye brand).

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

New product launches for sugar-reduced sauces and condiments, **Western Europe** (01/2015 - 08/2019)

## Top Countries:

- |               |               |
|---------------|---------------|
| • Germany     | • Italy       |
| • UK          | • France      |
| • Spain       | • Austria     |
| • Netherlands | • Switzerland |
| • Norway      | • Belgium     |

## Top Claims:

- No/low/reduced sugar
- No/low/reduced fat
- No added sugar
- Gluten free
- No/low/reduced allergen

## Market insights - Sauces & Condiments



### UK, The Flava People

Blend Bros **Sugar Free** Smoky BBQ Sauce is a rich and smoky sauce and provides five calories per serving.

- ☑ Sucralose (sweetener)



### Poland, Heinz

Heinz Reduced Sugar and Salt Mild Tomato Ketchup contains **50% less sugar** and salt than the regular Heinz ketchup variety.

- ☑ Steviol glycosides (sweetener)



### Germany, XXL Nutrition

XXL Nutrition's Light Tasty Burger Sauce is **free from sugar** and fat, and contains no gluten, lactose, GMO or MSG.

- ☑ Sucralose (sweetener)



### France, Unilever

Amora Les Miam's Light Mayonnaise is aimed at children. It is **low in sugar** and free from preservatives.

- ☑ Sugar
- ☑ Flavouring

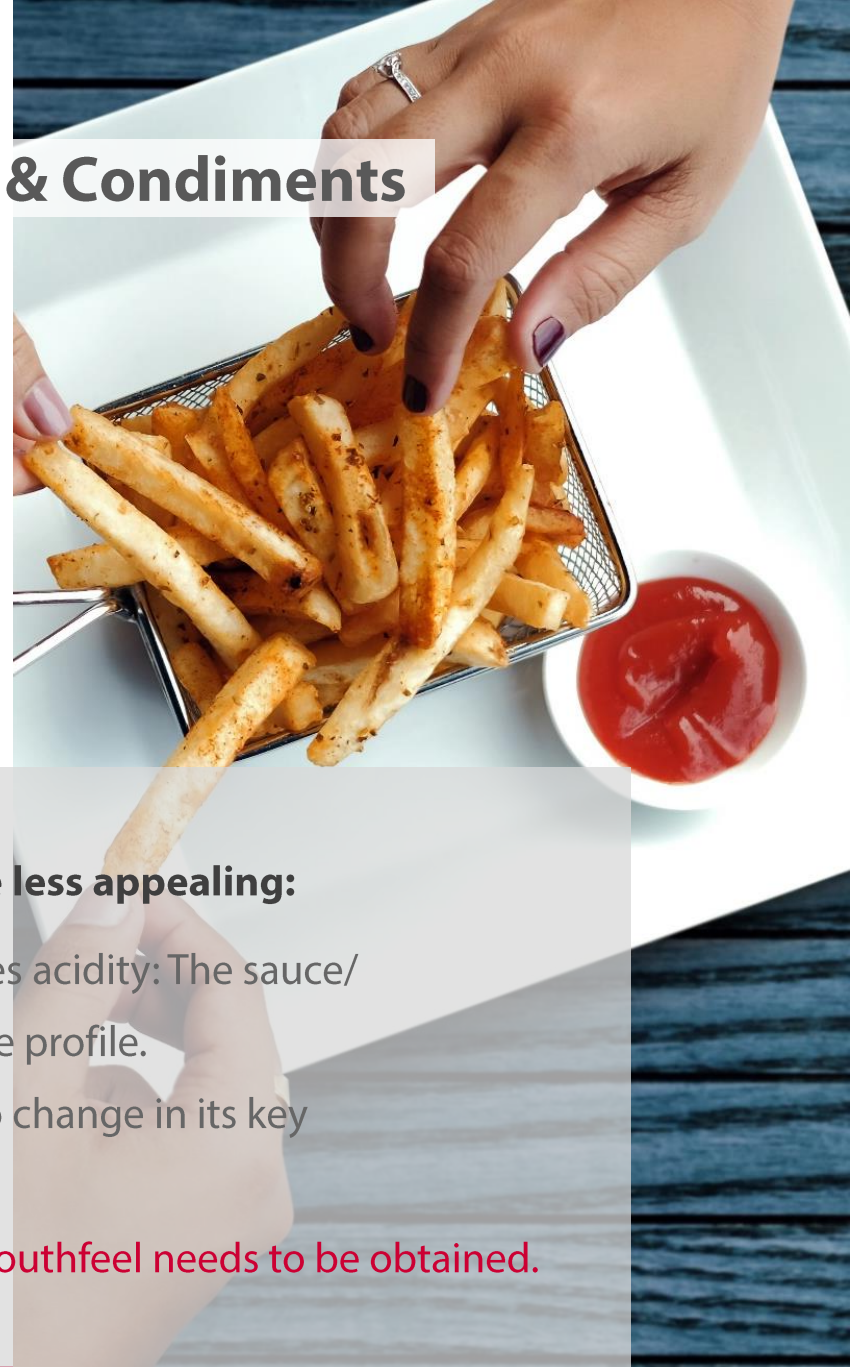
# Sugar reduction challenges – Sauces & Condiments

## What is the impact of reducing sugar in sauces and condiments?

Although sugar is not a main taste component in sauces and condiments, it plays a technological role, as it contributes to microbiological stability in the product and provides mouthfeel as a bulking agent.

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

- Sugar supports spicy as well as fruity notes and balances acidity: The sauce/condiment will be perceived as less harmonic in its taste profile.
- The signature taste profile of the application might also change in its key characteristics, even if sugar is only partly reduced.
- A functional solution for closing the gap in taste and mouthfeel needs to be obtained.





## Functional taste solutions for sugar reduction in sauces & condiments

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.

**Get in touch with taste.** Discover Bell's functional solutions for sugar reduction in sauces and condiments based on natural raw materials in order to meet today's market needs and consumer expectations.



## REDsugar – Functional taste solutions for sugar reduction in sauces

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 of sauces and condiments.

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

Functional solutions for reformulating sauces and condiments to meet the political frameworks in Western European countries.

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

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

Successfully tested in a variety of sauces and condiments such as ketchup, mayonnaise and frites sauce.

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

# REDsugar – Functional taste solutions for sugar reduction in sauces and condiments

- **Bell's REDsugar** concept focuses on the market acceptance of sugar-reduced products. It provides **functional solutions** to reformulate sauces and condiments 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 sauces and condiments that is created by the technological properties of sugar. It balances and improves the overall taste profile of your product.



Tomato // Red sauces



Pepper // Spices



Clove // Spices

# REDsugar – Functional taste solutions for sugar reduction in sauces and condiments

Application formula	Standard Frites Sauce	Sugar reduced Frites Sauce, -30%
Ingredients	Quantity (kg)	
Sugar	10,00	6,90
Salt	1,20	1,20
N-Creamer 46	0,70	0,70
Water	52,64	56,17
Oil	26,00	26,00
Ultra Tex 2000	4,00	4,20
Vinegar (10 % acid)	5,30	4,70
Citric Acid	0,05	0,05
Colorant Carrot OR	0,01	0,01
Potassium sorbat	0,10	0,10
Bell's REDsugar flavour solution in recommended dosage	x	x
<b>Total</b>	<b>100,00</b>	<b>100,00</b>

## Manufacturing recommendation:

1. Weigh all ingredients.
2. Mix dry ingredients except Ultra Tex 2000. Stir them in water until they are well combined.
3. Disperse Ultra Tex 2000 in triple amount of oil.
4. While stirring the water mixture constantly, first slowly add Ultra Tex 2000 mixture, than oil and vinegar.
5. Emulsify under vacuum by stirring vigorously.
6. Add the colorant to the sauce.
7. Add Bell's flavours in recommended dosage.



# REDsugar – Functional taste solutions for sugar reduction in sauces and condiments

Application formula	Standard tomato ketchup	Sugar reduced tomato ketchup, -30%
Ingredients	Quantity (kg)	
Sieved tomato	47,70	53,00
Water	17,90	18,70
Sugar	17,00	10,60
Vinegar 10%	8,50	8,50
HPC Purity	2,40	2,70
Salt	1,50	1,50
Tomato paste double concentrated	5,00	5,00
Bell's REDsugar flavour solution in recommended dosage	x	x
<b>Total</b>	<b>100,00</b>	<b>100,00</b>

## Manufacturing recommendation:

1. Weigh all ingredients.
2. Mix water, starch, salt and sugar in Thermomix at level 2.
3. Mix up the measures at level 3-4 until 90° C and keep the temperature for 7 minutes.
4. Add tomato paste and sieved tomatoes. Continue mixing at level 3-4 (program: Varoma).
5. Reset to 100° C and hold this temperature for 6 minutes.
6. Add the vinegar and mix without additional heat for one minute at level 6-7.
7. Add Bell's flavours in recommended dosage.



# REDsugar – Functional taste solutions for sugar reduction in sauces and condiments

Application formula	Standard BBQ Sauce	Sugar reduced BBQ Sauce, -30%
Ingredients	Quantity (kg)	
Tomato paste double concentrated	25,20	24,70
Water	19,90	29,70
Sugar	15,00	6,70
Vinegar 10%	9,50	8,00
Brown sugar	8,00	8,00
Mild onion cubes	6,00	5,50
Red paprika cubes	4,50	4,80
Orange juice 100%	4,00	4,00
Salt	2,20	2,20
Starch HPC Purity	2,40	2,90
Gherkins	2,00	2,20
Lemon juice 100%	1,00	1,00
Caramel sugar syrup	0,30	0,30
Bell's REDsugar flavour solution in recommended dosage	x	x
<b>Total</b>	<b>100,00</b>	<b>100,00</b>

## Manufacturing recommendation:

1. Weigh all ingredients.
2. Mix water, orange juice, caramel sugar syrup, starch, salt and sugar in Thermomix at level 2.
3. Mix up the measures at level 3-4 until 90° C and keep the temperature for 3 minutes.
4. Add the tomato paste and continue mixing at level 4 (program: Varoma). Reset to 100° C and hold this temperature for 3 minutes.
5. Add onions, paprika, gherkins and mix (counter-clockwise) on level 3 at 100° C for 2 minutes.
6. Add the vinegar and lemon juice and mix (counter-clockwise) without additional heat for one minute at level 6-7.
7. Add Bell's flavours in recommended dosage.

# REDsugar solution for sauces and condiments

## Frites Sauce

4500396 Frites Sauce Flavour  
Dosage: 0,13 : 100  
Declaration: Natural Flavouring,  
halal-conform,  
vegan/vegetarian

4300431 REDsugar Pepper Flavour Powder  
Dosage: 0,13 : 100  
Declaration: Natural Flavouring,  
halal-conform,  
vegan/vegetarian



### Declaration possibilities:

- Free from artificial sweeteners
- Free from sweeteners
- 30% less sugar than other frites sauces

# REDsugar solution for sauces and condiments

## Tomato Ketchup

4300423	Ketchup Spice Flavour Powder
Dosage:	0,12 : 100
Declaration:	Natural Flavouring, halal-conform, vegan/vegetarian
4300416	REDsugar Tomato Flavour Powder
Dosage:	0,15 : 100
Declaration:	Natural Flavouring, halal-conform, vegan/vegetarian



### Declaration possibilities:

- Free from artificial sweeteners
- Free from sweeteners
- 30% less sugar than other ketchup products



# REDsugar solution for sauces and condiments

## BBQ Sauce

4500394                      BBQ Flavour  
Dosage:                      0,12 : 100  
Declaration:                Natural Flavouring,  
                                      halal-conform,  
                                      vegan/vegetarian

4500393                      Smoke Flavour  
Dosage:                      0,10 : 100  
Declaration:                Smoke Flavouring,  
                                      halal-conform,  
                                      vegan/vegetarian

4300416                      REDsugar Tomato Flavour Powder  
Dosage:                      0,15 : 100  
Declaration:                Natural Flavouring,  
                                      halal-conform,  
                                      vegan/vegetarian



### Declaration possibilities:

- Free from artificial sweeteners
- Free from sweeteners
- 30% less sugar than other BBQ sauces

# REDsugar solution for sauces and condiments

## Frites Sauce – Tasting session

1. Frites Sauce 100 % sugar	2. Frites Sauce - 30 % sugar	3. Frites Sauce - 30 % sugar + 4300431 REDsugar Pepper Flavour Powder
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# REDsugar solution for sauces and condiments

## Tomato Ketchup – Tasting session

1. Tomato Ketchup 100 % sugar	2. Tomato Ketchup - 30 % sugar	3. Tomato Ketchup - 30 % sugar + 4300416 REDsugar Tomato Flavour Powder
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# REDsugar solution for sauces and condiments

## BBQ Sauce – Tasting session

1. BBQ Sauce 100 % sugar	2. BBQ Sauce - 30 % sugar	3. BBQ Sauce - 30 % sugar + 4300416 REDsugar Tomato Flavour Powder
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