Food ingredients Europe

Natural and clean label sugar reduction

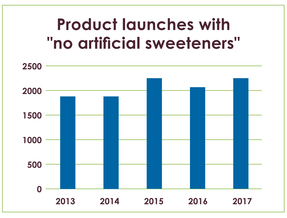
Many consumers worldwide are paying attention to the sugar reduction message

According to a DSM survey[1]:

55% of global consumers said they always checked product labels for sugar content

50% of the 8000 surveyed would pay more for products using 'only natural sweeteners'

New food and drink launches carrying the claim 'no artificial sweeteners': 1,901 in 2013 vs 2,297 in 2017 (an increase of **17%**)



Source: Mintel GNPD 2018

What are the alternatives?

'Natural' sugars

Honey

Agave syrup

Fruit juice concentrates

Coconut sugar

Benefits:
- Retain much of the functionality of sugar, making reformulation easier
- Perceived by consumers as healthier than refined sugar

Challenges:
- Can contribute to health problems such as tooth decay and diabetes
- Count as added sugars from a nutritional and labelling perspective

Bulk sweeteners

Bulk sweeteners are used in similar quantities to sugar and tend to be slightly less sweet. Natural options include:

Xylitol
has health claims associated with prevention of dental caries.

Application: chewing gum

Maltitol
is more hydrophobic.

Application: boiled sweets and hard coatings

Isomalt
is more hydrophobic.

Application: boiled sweets and hard coatings

Erythritol
gives a strong cooling sensation.

Application: anything with mint and menthol flavours

Allulose

- A rare sugar that exists in very small quantities in nature, including in fruits like figs and raisins
- Not approved for use in the European Union but granted GRAS (generally recognized as safe) status by the U.S. Food and Drug Administration in 2014
- Uptake is still low: 9 new products launched in 2017, and 11 in the first half of 2018 contained allulose

High intensity sweeteners

Stevia and monk fruit have emerged as frontrunners in this space but other alternatives, extracted from several West African plants and fruits, include:

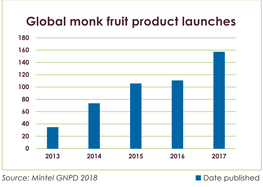
Miraculin
binds to sweet taste receptors making sour-tasting food seem sweet

Monellin
works well with bulk sweeteners to reduce persistent sweetness

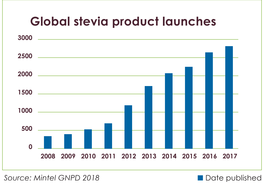
Thaumatin
is used for flavour modification due to a slow-building and lingering sweetness

Brazzein
has a more sugar-like sweetness than thaumatin and can offset stevia's aftertaste

Monk fruit v Stevia



Source: Mintel GNPD 2018 ■ Date published



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New product launches containing monk fruit have risen **77%** over the last 5 years

Monk fruit:

Benefits:
- Has a more sugar-like taste profile than stevia
- Its fruit source appeals to premium brands

Challenges:
- Still not approved in some major markets, including Europe and Japan
- Costs three times more than stevia

Stevia:

Benefits:
- Has wide regulatory approval
- Is easy to cultivate with multiple harvests per year
- Heat & pH stable
- Lower price point than other natural zero-calorie sweeteners

Challenges:
- Has a bitter aftertaste that needs to be masked

Clean label options

Fermentation
Introducing molecules that replace sugar molecules into a product can reduce sugar without losing sweetness. In addition, it can create new flavours and has potential health benefits. E.g. kombucha

Flavour manipulation
Using flavours associated with sweetness, e.g. vanilla and strawberry, can boost the perception of sweetness

Sensory Science
The perception of sweetness may be influenced by other senses too. Using different shapes, smells and colours can change how people taste products

Lean more about the latest trends in sugar reduction at this year's Fi Conference
www.figlobal.com/fieurope/conferences

Sources:
[1]Global Insight Series, Sugar is the new normal: rethinking sugar labelling strategies, DSM