

Sugars for healthy confectionery?

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considers the
impact of two new
toothfriendly sugars*

To buy or not to buy – that is the occasionally difficult question for parents who would like to give their children a sweet treat.

Although the caring mother is concerned about the negative effects of sugar on dental health, she may simultaneously feel somewhat uneasy about 'artificial' sweeteners and the food additives that may be incorporated within sugar-free products.

The adult consumer is occasionally in a similar dilemma. What should the purchaser make of sugar-free caramels when it is obvious that caramel, by definition, is manufactured from sugar? Furthermore, sugar-free chocolate may evoke an ambivalent reaction,



Photos: Toothfriendly International

Parents may like to give their children a sweet treat, yet be in a dilemma about whether to opt for the traditional or sugar-free option. The new sugars represent a third way.

since chocolate is perceived as a 'natural' food that contains sugar, rather than sweeteners.

The new sugars

With the EU authorisation of the two new sugars named isomaltulose and tagatose, the confectionery industry can create chocolate, caramels and other sweets that are obviously not sugar-free, yet provide toothfriendly benefits.

Isomaltulose is marketed as Xtend Isomaltulose by Cargill and as Palatinose by Palatinit. Tagatose may be obtained as Nutrilatose from Nutrilab, a Belgian company linked to the Damhert group. Nutrilab has recently been engaged in the development of the tagatose business, following the withdrawal of Arla from this project.

Toothfriendly chocolate containing isomaltulose and tagatose has recently been developed by Barry Callebaut and

Nutrilab, respectively. As isomaltulose and tagatose are sugars, they may be used – alone or in combination – in chocolate, without jeopardising the standard of identity



Isomaltulose and tagatose facilitate the creation of such products as caramels that are obviously not sugar-free, yet have toothfriendly benefits



Toothfriendly chocolate containing isomaltulose and tagatose have recently been developed by Barry Callebaut and Nutrilab, respectively

(Directive 2004/77/EC). Other confectionery products containing these new sugars are under development. These products comply with the criteria regarding toothfriendly properties and may be promoted with the Happy Tooth symbol, together with the explanatory term 'toothfriendly'.

Labelling

As isomaltulose and tagatose are foods, not food additives, no special labelling requirements are associated with use of these sweet ingredients. A statement about potential laxative effects is only required if one serving of a product contains more than 15g of tagatose. Isomaltulose, on the other hand, has a high intestinal tolerance and is, from this perspective, ideally suited to the formulation of toothfriendly confectionery positioned at children. It may be consumed in relatively large amounts in such products as chocolate and gummy bears.

There are myriad technological problems to be overcome before toothfriendly confectionery containing isomaltulose and/or tagatose can achieve large-scale market penetration. However, the health-conscious mother will undoubtedly welcome the introduction of toothfriendly confectionery that she can offer to her children without the doubts that sugar-free claims occasionally evoke.

Reformulation with new sugars

The advent of isomaltulose and tagatose marks the introduction of two new sugars with favourable nutritional properties becoming available for food formulation. As stated hitherto, both products are toothfriendly, i.e. are not fermented by dental plaque bacteria and thus not promoting dental caries. Furthermore, tagatose has a reduced energy value (1.5kcal/g is considered acceptable by the US Food and Drug Administration) and has a glycaemic index that is close to zero. Isomaltulose has the same energy value as traditional sugars (i.e. 4kcal/g), but has a lower glycaemic index than glucose or starch.

In the forthcoming discussion of

nutritional profiles, it may be important to point out these advantageous properties, as they put into question the indiscriminate denigration of sugars en masse. In other words, tagatose and isomaltulose are striking examples of ingredients that support the argument that nutritional profiles should be about nutritional properties, rather than chemical classification.

Sugars that are toothfriendly

Tagatose is chemically a sugar, yet exhibits all the physiological properties of a polyol (e.g. sorbitol). As toothfriendly chocolate can be manufactured from isomaltulose and/or tagatose, it is not justified to preclude chocolate, in general, from the future application of health claims, simply because it contains sugar(s) and fat(s). With regard to applied sugars, a distinction should definitely be made between those that do or do not promote tooth decay.

Concluding remarks

The acknowledgement of the toothfriendly benefits of isomaltulose and tagatose should lead to an amendment of the *Sweeteners Directive* (94/35/EC). In its current form, this directive makes it impossible to apply polyols or intensive sweeteners to confectionery that contains added sugars, the exceptions being energy-reduced cocoa-, starch- or fruit-based confectionery. The justification for this regulation is that the use of sweeteners as sugar replacements is only justified if there is a consumer benefit, such as energy-reduction or non-cariogenicity. However, in view of the non-cariogenicity of isomaltulose and tagatose, these two sugars would now need to be exempted



The famous Happy Tooth symbol signifies that products comply with the criteria regarding toothfriendly properties

from the definition of 'added sugars', specified in Article 1 (3) of the *Sweeteners Directive*. This would facilitate greater flexibility in the formulation of toothfriendly confectionery. Examples are Nutriose FB from Roquette Frères or other toothfriendly dietary fibres and non-sweet bulking agents that necessitate the use of intense sweeteners to achieve optimal taste. ■

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