TATE & LYLE

STATE OF SWEETENERS REPORT

Considerations impacting sweetener usage today, and in the future

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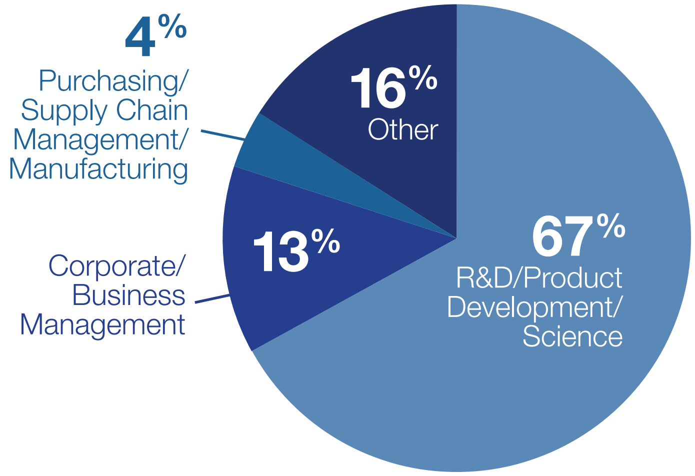
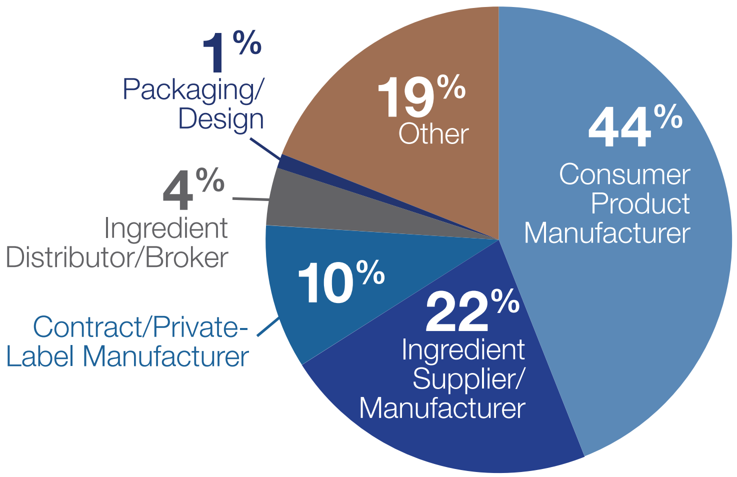
It's no secret US consumers like their sweets. A recent study by Gallup confirms Americans consume about nine sweetened prepared food or beverage items on a regular basis.[1] At the same time, 83% of consumers are trying to lose weight or maintain their weight,[2] so reducing calories from sugar can help. Hence, food and beverage product developers are carefully considering their sweetener ingredients in order to provide products that deliver the taste consumers desire, but without too many calories.

In July 2014, Tate & Lyle worked with Food Product Design to explore the current trends in the sweeteners market by surveying readers about their usage of sweeteners and other factors impacting the sweeteners market. Respondents represented a wide range of industries, with the majority in the food industries (55%) and beverage industries (16%).

Survey respondent job titles



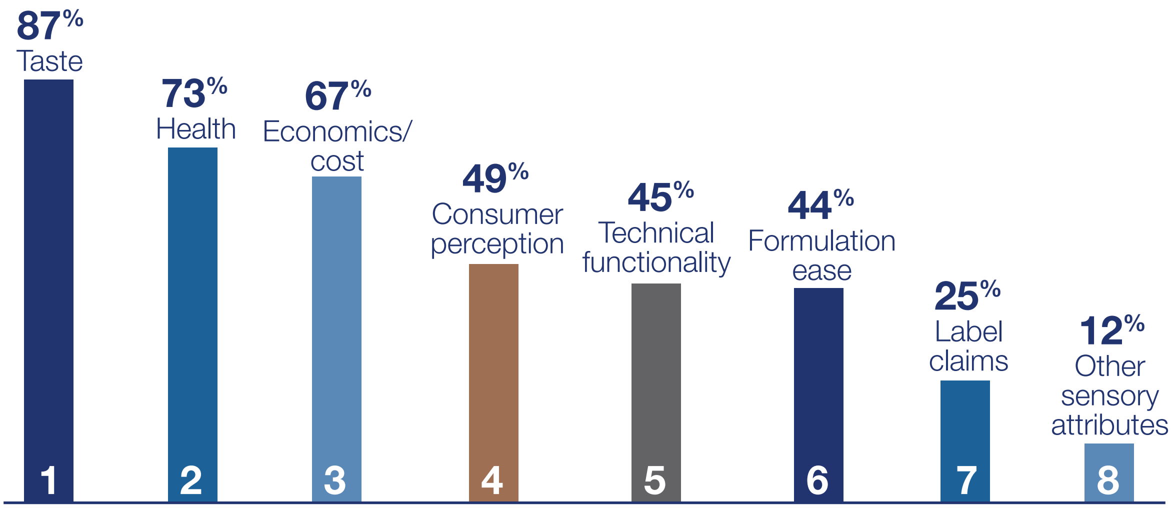
Survey respondent business category



Taste is the top consideration

While sweetener selection can often be dependent upon a variety of business objectives, including desired sensory characteristics, caloric goals, cost targets and product positioning, the primary deciding factor is taste. This finding directly aligns with what respondents believe their target consumers are most concerned about as well, with 84% of respondents indicating taste is very important to their end user. The 2013 survey by the International Food Information Council also supports this insight, finding that nearly 90% of US consumers agree that taste is their primary purchase motivator.

What are your considerations as they relate to your usage of sweeteners in food/beverage formulations?



*Percentage who ranked each consideration in the top three most important

Respondents' insights

"We want to make what consumers will buy, so being sensitive to perception is important. It is also important to show consumers how ingredient choices in products are supported by good, thoughtful science."

–R&D professional, Bakery/Cereal

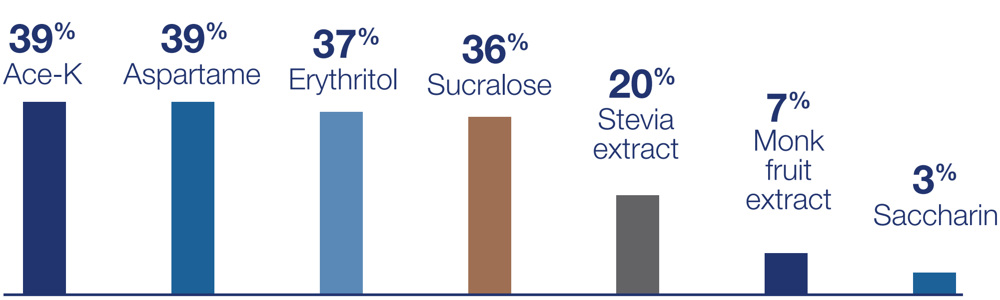
Even though sugar is usually the desired flavor profile other sweeteners aim to achieve, there is evidence that more and more new products are being formulated with high-potency sweeteners than ever before. According to Innova Market Insights, food and beverage launches with high-intensity sweeteners are growing at twice the rate as products launched containing sugar.[3]

	INNOVA LAUNCHES			PENETRATION RATE (Percent of all launches)			Change (2011-2013)
	2011	2012	2013	2011	2012	2013	
Launches with sugar	7,206	10,329	11,886	23%	30%	32%	+41%
Launches with a high-potency sweetener	1,867	2,895	4,009	6%	8%	11%	+83%

Health still top of mind

While taste dominates both manufacturer and consumer decision-making when it comes to product development and purchasing, health is also a major factor both groups perceive as important. As noted in the earlier chart, health ranks as the number two consideration of respondents when choosing sweeteners.

Ranking of non-nutritive sweeteners used most often



*Percentage who ranked each sweetener in the top three most often used

Virtually every American thinks about the healthfulness of the food and beverages he or she consumes.[4] Calories and sugar play a role in this because three out of four US consumers are making an effort to cut back on foods higher in sugar. Many are also looking to alternative sweeteners: 61% said they use low- or no-calorie sweeteners to help lose weight or maintain their weight.[5]

Respondents' insights

"If it doesn't taste good and consumers won't eat it, all other points are moot."
–R&D professional, Bakery/Cereal

"Mouthfeel and taste preference—without that, you won't sell anything, no matter what the claim."
–Ingredient supplier, Beverage (tea/coffee)

Consumer considerations

Another top consideration for respondents' sweetener choice is consumer perception. While survey respondents said their target customers are most concerned about taste, they also believed consumers are paying close attention to whether the sweeteners in their products are from a natural source, with 62% of respondents indicating natural vs. artificial is a very important consumer consideration.

Respondents predict that sweeteners from a natural source will increase in usage the most over the next three years. About two-thirds of respondents plan to use stevia more frequently. Monk fruit extract, erythritol and sucralose are expected to increase as well.

On the flip side, almost 50% of respondents projected that the usage of aspartame would drop somewhat or substantially.

How do you expect your usage of the following sweeteners to change over the next three years?

	Next 3 years	
	Increase substantially/ somewhat	Decrease substantially/ somewhat
Stevia	64%	7%
Monk Fruit Extract	45%	12%
Erythritol	40%	12%
Sucralose	36%	18%
Ace-K	16%	32%
Aspartame	11%	48%
Saccharin	9%	44%

While interest in natural, high-potency sweeteners may be increasing, many respondents mentioned the challenges associated with this type of ingredient. When manufacturers use stevia in formulations, particularly at higher use levels, many people can detect a strong bitterness. This may be one reason why respondents cited technical knowledge in a sweetener supplier to be of key importance, since formulating with natural sweeteners can be a complex process.

Respondents' insights

"Little improvement is needed on the traditional sweetener side. More work needs to be done on natural, high-intensity sweeteners to provide a product that is similar to sucrose without off-flavors."
–R&D professional, Dairy

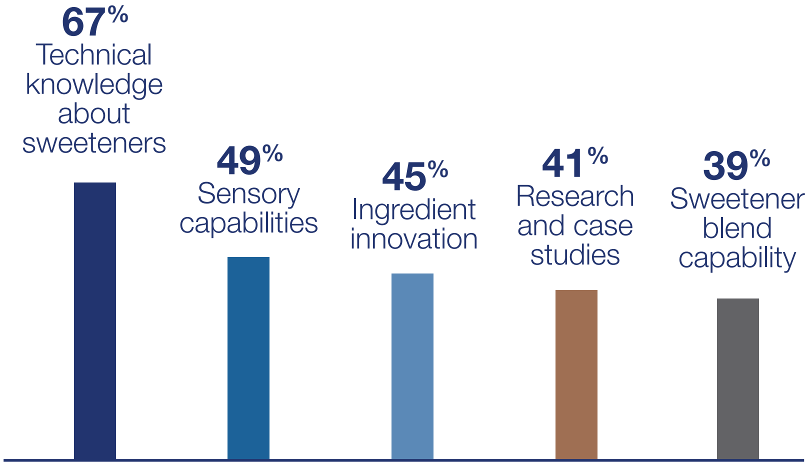
"Natural sweeteners like stevia are very difficult to use in no-added-sugar concepts (taste problem), so any help with this would be appreciated."
–Product manager, Dairy

Seeking suppliers' help

Respondents noted that maintaining functionality is a primary product formulation driver related to sweetness. In general, replacing sugar with high-potency sweeteners comes with challenges for manufacturers, including maintaining a product's texture and mouthfeel due to a loss in solids and maintaining a balanced sweetness.

To overcome these challenges, some respondents said they are looking to suppliers to provide more formulation assistance. For example, in the case of developing products with rebaudioside A, a common form of stevia, the aftertaste at high levels is bitter for many consumers; thus, other ingredients are sometimes necessary to mask bitterness and boost sweetness. Choosing a supplier that has knowledge and expertise across a variety of ingredients is key.

How important are the following supplier services to you?



Percentage rating "very important"

Respondents' insights

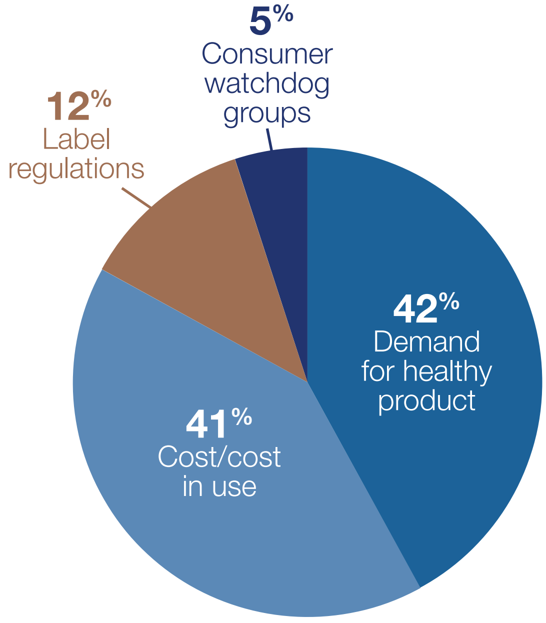
"We expect suppliers to provide expertise in blending sweeteners to achieve the best possible taste."
–R&D professional, Nutritional Products

"[Need to know] how and what to blend with natural, high-intensity sweeteners to get a balanced sweetness."
–R&D professional, Food Industry

Future usage

As food and beverage manufacturers focus on developing new products, it appears health is likely to play an important role: Survey respondents predicted the demand for healthy products is going to have the biggest impact on their sweetener usage over the next three years. Not surprisingly, cost in use was another factor projected to influence sweetener choice, as manufacturers always need to provide a good-value end product to the consumer.

What factors will have the biggest impact on sweetener usage in the next three to five years?



Percentage ranked "most important"

Selecting sweeteners

The sweeteners landscape is continually evolving. Consumer demands change, ingredient technology improves, and regulatory and health concerns continue to play a role in the selection of sweeteners. Combined with the diverse and vast number of industries that use sweetener ingredients and the demands within those industries, it's nearly impossible to find a one-size-fits-all solution to sweetness. Many professionals within the food and beverage industry carefully consider sweetener ingredients and turn to ingredient suppliers that have the experience and technical capabilities to aid in identifying sweet solutions with the goal of providing the best product to consumers.

About Tate & Lyle

Tate & Lyle is a global provider of ingredients and solutions to the food, beverage and other industries, with operations in over 30 locations worldwide.

Tate & Lyle operates through two global divisions, Speciality Food Ingredients and Bulk Ingredients, supported by our Innovation and Commercial Development and Global Operations groups. The Group's strategy is to become a leading global provider of Speciality Food Ingredients through a disciplined focus on growth, and by driving Bulk Ingredients for sustained cash generation to fuel this growth.

Speciality Food Ingredients consists of three platforms: Texturants, which includes speciality starches and stabilisers; Sweeteners, which comprises nutritive sweeteners and our range of no-calorie sweeteners including SPLENDA® Sucralose; and our Health and Wellness portfolio, which includes speciality fibres and our salt-reduction offering. Additionally, our Food Systems business provides a wide variety of blended ingredient solutions.

Tate & Lyle Bulk Ingredients includes bulk sweeteners, industrial starches and fermentation products (primarily acidulants). Corn co-products from both divisions are primarily sold as animal feed.

Tate & Lyle is listed on the London Stock Exchange under the symbol TATE.L. American Depositary Receipts trade under TATYY. In the year to 31 March 2015, Tate & Lyle sales totalled £2.7 billion. For more information, please visit http://www.tateandlyle.com.

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References

[1]*Multi-sponsor Inc., 2013 Gallup Study of Sweetener Preferences.*

[2]*International Food Information Council Foundation, 2013 Food and Health Survey.*

[3]*Innova Market Insights, product launches by sweetener type, 2011-2013.*

[4]*International Food Information Council Foundation, 2013 Food and Health Survey.*

[5]*Illuminas, U.S. Sweetener Landscape Study, May 2012.*

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