

Reduced Sugar Beverages: Hydrocolloid Opportunity?

Hydrocolloids have long been a key ingredient category within the food and beverage industry. The ever-growing demand for flavored beverages is expected to propel growth even further, as new application opportunities open up.

by Elizabeth Green

As regulatory moves occur related to excess sugar in food and beverages, combined with general consumer concern regarding sugar intake, the food & beverage industry is responding. A review of product launch information from Innova Market Insights data show clear trends in sugar claims such as sugar-free, low-sugar and no added sugar have occurred over the last ten years. Product launches with a sugar claim over this same timeframe have been outpacing the general launch numbers, with a CAGR of 8.4 percent. The same data show that products with both a sugar claim and those containing a hydrocolloid have been growing at a healthy 10.2

percent during this period. In fact, from 2013 to 2017, “low-sugar” was the fastest growing claim in the soft drinks category, with an average annual growth of +16.7 percent, according to Innova Market Insights.

In low-sugar/sugar-free (LSSF) products, the main stabilizer applied in new products was maltodextrin, featuring in 8.2 percent of new LSSF beverages launches tracked. Gum Arabic was used in 6.3 percent of launches and xanthan gum featured in 5.9 percent of launches reported in the same period.

Unexplored Potential?

Ross Campbell, Business Director at CyberColloids Ltd, believes that

there are lots of unexplored opportunities for sugar reduction through the use of hydrocolloids. “They have been around for a long time, but interestingly there is not yet an ideal answer for sugar replacement, because it will likely be expensive.”

“Sugar is very cheap, so are companies prepared to add extra cost to take the sugar out? To date, we haven’t seen a huge hydrocolloid usage as a sugar replacement, so there is a lot of noise around this, but if a brand is going to be damaged because it has high sugar, they are going to have to put other ingredients in at a cost,” he says.

Sugar gives both sweetness and mouthfeel, so when replaced, hy-

drocolloids have to be able to provide that suitable mouthfeel. There is no immediate answer, according to Campbell, but the products most likely to be successful in this regard are those with a lower viscosity range.

Phil a’Becket, Market Research Analyst at TIC Gums, believes the primary reason for the strong growth in products with a sugar claim and hydrocolloid content is due to the recognizable and distinct mouthfeel provided by sugar, which is lost by reducing or removing it from a formula. “Since gums and gum blends are excellent texturizing ingredients, the addition of one or more gums in place of sugar can replicate this mouthfeel, minimally impacting the product and the consumer experience,” he says.

The challenges faced by manufacturers of sugar-sweetened beverages aren’t that easy to address, but by leveraging a hydrocolloid solution and creating low and no sugar drinks that meet consumer expectations, this can present opportunities for breakthrough innovation and growth. A small amount of a hydrocolloid can go a long way in compensating for sensory properties when reducing sugar in beverages.

“On one end of the spectrum, manufacturers are looking for ways to develop and offer low sugar and low-calorie beverages while providing the experience of full sugar products. Hydrocolloid ingredients like GENU Pectin and KELTROL Xanthan Gum from CP Kelco can enable developers to enhance mouthfeel and the flavor profile in a wide variety of reduced sugar beverages,” says Jérôme Béra, Global Marketing at CP Kelco.

The Clean Conundrum

Beyond sugar reduction, the key theme in the soft drinks industry remains clean label, which presents challenges, particularly from a marketing perspective.

For beverages, the trend entails using ingredients that consumers recognize. Consumers are demanding the removal of “artificial” from fruit beverage labels, which limits the types of ingredients used to add mouthfeel.

“A key consideration for developers today is the desire to use a particular ingredient or set of ingredients that address clean label re-



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quirements. This could pose a challenge in achieving the most effective functionality for the formulation. Developers should address each functional property they are seeking in their formulations to ensure excellent stability in their products,” explains Béra.

Nesha Zalesny, Technical Sales Manager for Fiberstar, notes that the clean label push has made transparency and consumer-friendly ingredients extremely important. “In fruit-based beverages, smoothies are becoming ever more popular – especially in the clean label arena. High-pressure processing (HPP) is gaining more consumer and manufacturing acceptance, which brings fresher tasting juices to the market.”

Expectations for these beverages are a little different than in the traditional beverage market, Zalesny notes. “Consumers fully expect to shake before consumption. These beverages have an ultra-clean label, so manufacturers are struggling with stability and mouthfeel. Traditional ingredients such as xanthan or guar gums are not ideal options in these beverages, as these are not perceived to be clean label.”

Pectin Sourcing Challenges

Another challenge that the hydrocolloids sector continually faces relates to supply. Many manufacturers stock raw materials to avoid supply shortages in hydrocolloids. They also emphasize product innovation, in spite of discrepancies in the supply chain and raw material price volatility, which accounts for a significant share of the overall production cost of some hydrocolloids. Over the past few years, the pectin industry has faced challenges related to raw material supply shortages and production capacity limitations, driven by higher growth rates across emerging markets globally, as well as a poor harvest of lemon and lime in Latin America in the 2014-15 season.

As the world’s leading producer of pectin, CP Kelco claims to have taken bold mitigation actions since 2014 to ensure the sustainability of their GENU Pectin range of products. Upon development of an innovative and patented peel extraction technology using an abundant orange peel, CP Kelco has constructed a state-of-the-art peel processing plant in Brazil, leveraging the

new technology to secure sustainable peel and, consequently, pectin supplies for the future. “We have also invested in numerous capacity expansions to continue ensure our ability to respond to growth in pectin demand globally,” adds Béra.

CP Kelco’s investment in the pectin platform addresses both raw material supply and production capacity – demonstrating a clear commitment to the growing application segments

Jérôme Béra, Global Marketing, CP Kelco:
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for pectin over the long term.

“We believe that hydrocolloid technology is likely to be further leveraged with the evolving complexity of beverage formulations. Manufacturers will likely need to adapt to consumer demands and preferences relative to clean ingredients, generating opportunities for hydrocolloids to play a more significant role in new product innovation,” explains Béra.

Hydrocolloids and fibers are a great way to add back some mouthfeel when removing sugar. Xanthan gum can be used in the parts per million range to give a diet drink the same mouthfeel as a full sugar. Fiberstar’s Citri-Fi, a natural fiber derived from citrus fruit, gives a natural mouthfeel that is especially desirable in juice drinks.

Citri-Fi is a non-GMO, natural and whole fiber which can be used with other hydrocolloids to provide a good mouthfeel for reduced sugar beverages. “For those manufacturers that are looking to extend fruit pulp as well, this natural fiber can be used to replace the fruit pulp, while maintaining texture and mouthfeel partially,” explains Zalesny, from Fiberstar.

The Future of Hydrocolloids

As consumers continue to push for label transparency, clean declaration and natural ingredients, food ingredients that were once commonly found in beverages will continue to be pushed to the fringes. Clean label ingredients will continue to grow. Zalesny believes that some hydrocolloid ingredient manufac-

turers are being pressed to make a concerted effort educate the public. “Their goal is to educate the public about the ingredient’s safety using sound scientific reasoning and practices,” she says.

“Unique cultured dairy products and other fermented type probiotic beverages will continue to grow. The clean label push is not going to go away anytime soon, so I expect to see even more push back on in-

sources of high-quality ingredients available. This is making hydrocolloids more of a commodity than they used to be, and they will continue to thrive in food and, more specifically, sugar-reduced beverages for the foreseeable future,” notes Zalesny.

Campbell from CyberColloids believes that the future success of reduced sugar beverages is down to the minimum number of additives on labels. “Today’s consumers want all natural products and what can be more natural than some of these hydrocolloids? Sugar is the bad guy and this seems to be at a higher level than it previously has been. This could mean that consumer-led companies will take notice and pay the extra cost for these ingredients, but I’m not entirely convinced that consumers will buy into it,” he notes. “There are no health claims associated with higher priced beverages and I’m not sure if we are quite there yet,” Campbell concludes.

Hydrocolloids could be part of the solution to meet the formulation needs of tomorrow’s low sugar, functional and clean label demands. ▼

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