

BAKED-IN GOODNESS:

Using soluble fiber to deliver indulgence and health in the bakery aisle

Research from Cargill finds bakery consumers want the best of both worlds – indulgence and health – but delivering that dual track can be easier said than done. Fortunately, new ingredient tools and advances in formulation are helping bakeries achieve both demands.

Consumers really want it all,” explains McKenna Mills, Senior Technical Specialist with Cargill. “Decadent textures and sweet tastes are a must for baked goods, but we also know consumers want to feel good about the treats they choose.”

Cargill’s study found that consumers considered baked goods with a “Better for You” platform as an unmet need, with claims centered on low calories and sugar content earning most-sought status. But while nutritional credentials appear to be gaining importance, the research found indulgence remains the single-most important purchase trigger for cakes, pastries and cookies. Those seemingly competing goals set up the challenge facing bakeries today: reduce sugar without dialing back on decadence.

Mills says it’s not only possible – it’s already happening, and credits an unsung ingredient segment for the nutritional makeover slowly spreading through the bakery aisle. “We see more and more brands exploring sugar reduction in the bakery space, and it’s really the bulking agents that replace sugar’s mass driving this transformation,” she contends.

Bulking up

That’s not to say just any filler will do. In the world of bulking agents, soluble fibers have a big edge, as they can support both sugar reduction and fiber enrichment. The three most popular soluble fibers are polydextrose, soluble corn fiber and chicory root fiber (inulin); however, they have key differences around label designations and digestive tolerances, which bakers must consider.

“All three can support sugar reduction and fiber enrichment, so in that way, they’re fairly similar,” Mills explains. “But most consumers don’t know what polydextrose is, and given its chemical-sounding name, they aren’t keen to have it show up on product labels.”

Both soluble corn fiber and chicory root fiber offer consumers a clear understanding of their plant-based origins and earn net-positive purchase impact scores,¹ but they’re miles apart when it comes to digestive tolerances. With chicory root fiber, anything over 20 grams per day can result in digestive issues. In indulgent spaces like bakery, that means brands must closely watch inclusion levels to avoid leaving consumers with ill effects.

Soluble corn fiber offers tolerances up to 60 grams per day, levels that give bakers much more formulation freedom.

“If brands find they’re getting consumer complaints with chicory root fiber, it’s probably time to find a new bulking agent,” Mills offers. “Since soluble corn fiber provides similar functionality with three times the digestive tolerance, it’s a natural alternative.”

Other differences between the three fibers revolve around taste and economics. Chicory root fiber provides a hint of sweetness, something not present with either polydextrose or soluble corn fiber. But Mills says in most reduced-sugar formulations, all three fibers still need help from a high-intensity sweetener like stevia to replace sugar’s sweet taste. On the cost-in-use front, polydextrose and soluble corn fiber offer clear advantages over the more expensive chicory root fiber. Taken in total, soluble corn fiber becomes the clear winner, delivering on label appeal, digestive tolerance and affordability.

Function forward

From a functional perspective, soluble corn fiber makes similar contributions to texture as the sugar it replaces – supporting good crumb formation and pleasant mouthfeel. It also has half the calories of sugar, another benefit for brands aiming to marry indulgence and health.

In developing the fiber, Cargill partnered with Germany's Karlsruhe Institute for Technology to pioneer the use of patented microreactor technology. This approach delivers a consistent product with high fiber content. (Cargill's current offering is 80% fiber on a dry basis.) "It's an approach to ingredient production that doesn't just let us create the product we have today, but it also gives us lots of options for the future," Mills affirms, noting that Cargill is the only ingredient supplier using this advanced technology.

The resulting soluble corn fiber can be used to achieve a 30% sugar reduction in bakery with relative ease – avoiding common challenges with browning, texture or shelf life. But some brands may want to go higher, and Cargill can support those formulation goals, too. The company has created bakery prototypes that reduce sugar by as much as 50%, though at those higher levels, soluble corn fiber may need some help.

For example, once you push past a 30% sugar reduction in cookies, bakers may start to see more spread than desired. However, Cargill's bakery application team has found that pairing soluble corn fiber with other bulking agents can enable deeper cuts in sugar without compromising on sensory attributes. "While it's definitely application-dependent, we've gone as high as 50% sugar reduction and still delivered a truly indulgent product," Mills explains.

She points to Cargill's Linzer cookie prototype as an example. It offers a 50% reduction in sugar over its full-sugar counterpart, and packs enough fiber to qualify for a good source of fiber claim. Yet it still holds its shape, has a great texture and delivers on indulgence. To accomplish this feat, Cargill's bakery application team used two bulking agents – the newly launched soluble corn fiber and ActiStar® resistant starch.

"Hands down, it's my favorite reduced-sugar bakery concept," Mills says. "Sometimes I'll sample a reduced-sugar bakery product and it just won't measure up. With our Linzer cookie, I don't miss the sugar at all – I really can't tell it's gone."



Fill the gap

While Cargill's soluble corn fiber was developed to support sugar reduction, Mills is equally excited by the opportunities it affords for fiber enrichment. "The U.S. has one of the world's biggest fiber gaps," she explains, noting that less than 3% of the population meets the FDA's fiber intake guidelines. "Bakery is a great space to help consumers get more of this important nutrient."

Most bakery products inherently have some fiber from flour or other grains in the formula. As a result, achieving a "good" source of fiber claim (2.8 grams of fiber per serving) is often a relatively easy task. Getting to an excellent source claim (5.6 grams of fiber per serving) can be a more difficult lift, but with 80% fiber on a dry matter basis, Cargill's soluble corn fiber can help formulators hit the higher mark – especially since the versatile ingredient can be added to most any bakery item.

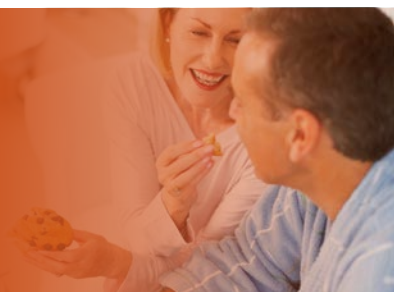
"Muffins, cakes, cookies, bake-stable fillings, even icings – there's really no limit to where this can go in the bakery space," Mills explains.

Rarely does one ingredient check so many boxes for consumers and bakers alike, but in this regard, Cargill's soluble corn fiber is a true standout, supporting sugar reduction, fiber enrichment and label-friendly formulation. "Products that meet consumers' label expectations and make it possible for brands to improve the nutritional credentials of their products – those are the ingredients that are in high demand," Mills emphasizes.



Cargill's soluble corn fiber fits those requirements and goes a step further, enabling bakers to deliver the healthier and indulgent baked goods consumers desire."

Learn how soluble corn fiber can add beneficial goodness to bakery products.



¹ Cargill proprietary consumer research, 2022.