

Q&A

Solving label-friendly formulation challenges with native starches



Michelle Kozora leads Cargill's team of food science professionals focused on starches. With more than 20 years of experience, she's helped hundreds of companies achieve their product formulation goals. Kozora admits today's push for simple recipes and recognizable ingredients has introduced new challenges, but contends that Cargill's growing portfolio of label-friendly tools, coupled with a fresh approach to formulation, will enable companies to create consumer-pleasing products.

How is Cargill helping customers with label-friendly formulation?

We're approaching the label-friendly challenge from two angles. First, we're investing in research and development, charging all of our teams to take a creative look at the botanical sources available to us. For example, within our starch development group, we've gone back to the basics, studying and quantifying all of the attributes of each individual starch in our portfolio. By gaining greater insight into the structure and unique properties of each of our starches, we are learning how to get more from them.

We're coupling that work with our extensive formulation expertise, partnering with our customers to re-think their recipes. We're challenging them to evaluate every ingredient in a recipe. Oftentimes, we find their recipes include ingredients that aren't actually contributing to the final product.

Can you give an example of what you've learned about starches?

We've realized that our native starches can do more than we ever thought possible, especially if we blend two or three together. We're also using basic processing techniques – like controlling moisture and heat – to create more robust starch solutions that better withstand harsh processing conditions.

When will customers see these new starch solutions?

We have a number of products already on the market, with more on the way. Customers can find them under our new SimPure™ brand. The SimPure™ line of functional native starches offer food and beverage manufacturers solutions that deliver additional functionality, such as greater process tolerance, shelf life or storage stability.

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SimPure™

Simple ingredients. Pure functionality.™

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A perfect example is the most recent addition to our starch offerings, SimPure™ 99560, which was designed specifically for culinary and convenience products, such as frozen-ready meals.

What makes SimPure™ 99560 stand out in the marketplace?

Its ability to match the performance of modified starches in difficult frozen-ready meal applications is unparalleled in the native starch world. We accomplished this by blending native starches from botanical sources.

Unlike traditional native starches, SimPure™ 99560 can withstand up to 10 freeze-thaw cycles, performing on par with the modified starches currently in use. It also delivers great texture and viscosity, holding up to the rigors of modern processing and delivering a consistent end product—in both acidic and neutral pH systems.

What about cost?

As a general rule, label-friendly formulations are more expensive. Even if you're using native starches, you often need to use more. They're just not as robust as the modified starches we relied on for so long.

Consumers may be willing to pay a little more for a label-friendly product, but especially if we're in a reformulating situation, companies want to have the same cost structure. We understand that reality, and that's where our formulation expertise and broad ingredient portfolio come into play. We have the ability to look at an entire recipe and find cost-savings. We also keep cost-in-use realities in mind as we develop new ingredient solutions. In the case of SimPure™ 99560, it is cost-competitive to other label-friendly alternatives, but offers significant performance advantages.

Can native starches really stand up to processing demands?

As an industry, we've always assumed that native starches weren't as robust as modified starches. However, since Cargill began experimenting with different starch blends from various botanical sources, we've found native starches can do more than we ever imagined.

SimPure™ 99560 is a perfect example. We confirmed our performance results with real-world customer-validated testing. In one customer production line test, a sauce created with SimPure™ 99560 was held in a kettle for four hours at 180°F, simulating a temporary production line shut down. The label-friendly starch blend delivered comparable performance to the customer's legacy modified starch. Another customer validated SimPure 99560's ability to withstand 12 complete freeze-thaw cycles. We've had customers use it with acidic tomato-based sauces and neutral alfredo-type sauces with equal success.

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What's next for the SimPure™ product line?

By blending different starches from various botanical sources together, we're dramatically increasing the number of tools in our toolbox. At the same time, it's changed how we approach formulation challenges. We sit down with customers to determine what specific attributes they need in a starch solution, then look at the individual characteristics of our different starches to create the right blend for their needs.

Looking further ahead, our scientists are hard at work exploring the benefits of additional starches. I also see great potential in using things like water and temperature to expand the functional benefits of many native starches, without impacting consumer acceptance.

Sometimes, you have to take a step back to make a leap forward. By examining our native starches with a fresh eye, that's exactly what we've done. This work will serve as a springboard for innovative, label-friendly starch solutions for years to come.

