SimPure™

Simple ingredients. Pure functionality.™

Simple Starches Fulfill Big Roles

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In the era of the "adventurous" consumer, sauces serve as the entry point into all manner of global cuisine, from south-Asian curries to Middle Eastern tagine sauces. But while creative culinologists are drawing flavor inspirations from around the globe, bringing those ethnically inspired experiences to life starts with a solid base. That's a reality making starches the unsung heroes of most great sauces.

"Sauces – especially those in frozen-ready meals – go through a lot," points out Erin Radermacher, senior technical services specialist for Cargill. "High retort temperatures, long hold times and low pH conditions, followed by a multitude of freeze-thaw cycles, can all conspire to do a number on the starch granules that give sauces viscosity and stability." Add in cost constraints and consumer "clean-label" demands, and the task can seem downright impossible.

Just five years ago, ingredient formulators would have insisted on modified starches for these moderate-to-high processing conditions. But according to Cargill's texturizing expert, that's no longer the case. "We've learned how to get more from our native starches using tools like temperature, water and pressure," she explains. The results speak for themselves, as the company continues to expand its line of highly functional native starches under the SimPure™ brand.

The timing couldn't be better, as processors clamor for help reformulating sauces to remove modified food starch from product labels. "Consumers want more transparency around the ingredients in the products they buy, and our SimPure™ products fit that desire to a T," Radermacher contends. "Our line of functional native starch solutions are all simple and pure – yet they have the kind of process tolerance that you'd typically only find in a modified food starch."

The company's two newest additions, SimPure™ 99400 (for low-to-moderate processes) and 99405 (for more intense processing conditions), both come from waxy corn. Designed for use in sauces, as well as soups and gravies, the cook-up starches create a rich, satisfying texture, delivering performance on par with legacy modified food starches – yet label simply, appearing on U.S. ingredient statements as corn starch.

The new starches give product developers some significant advantages over other label-friendly starches – especially when it comes to flavor. "Today's sauces are often layered with complex flavors, but some starches tend to mute those subtle notes," Radermacher explains. In contrast, sensory testing with Cargill's SimPure™ starches validates that their mild, neutral profile allows flavors to come through more clearly than other label-friendly options. Formulators will also appreciate the clean texture associated with the SimPure™ starches. "Native starches have a reputation for creating a pasty texture, but these starches provide a creamy, rich mouthfeel," Radermacher explains.

Thickeners and more

That brings up another common starch misconception. Formulators typically include starches in their sauces solely for their contributions to viscosity, but Radermacher insists that these foundational ingredients can do more. "Starches can serve as mouthfeel enhancers and even help control syneresis," she explains, both important tasks in the sauce world. Those additional functions can add up to cost savings, depending on the application. In a decadent cheese sauce, for example, formulators might be able to dial back the expensive dairy component by adding one of Cargill's label-friendly starches to the formula. The resulting sauce would still deliver the creamy mouthfeel consumers expect, while also keeping ingredient costs in line.

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That multifunctional appeal can also make Cargill's new starches part of the replacement solution for other ingredients sometimes targeted for removal: guar and xanthan gums. Radermacher admits that replacing these hydrocolloids in sauces can be tricky, but she insists that label-friendly solutions are possible. "It takes multiple ingredients and a bit of trial-and error," she acknowledges, "but starches can go a long way toward replicating the mouthfeel and viscosity provided by the gums." From there, she advises formulators to turn to other label-friendly ingredients like pea protein, pectin, lecithin and chicory root fiber to fill in the remaining functional gaps.

Label-friendly starches can also help formulators targeting the trendy plant-based space. For example, Cargill has developed a vegan cheese sauce prototype that relies on SimPure™ 94400 to create a consistency, texture and mouthfeel that mirrors traditional cheese sauce – without a drop of dairy. "We used pea protein to replace the bulk of milk solids, then relied on our label-friendly starch to replicate the creamy, dairy-like mouthfeel you expect from a dairy cheese sauce," Radermacher explains.

Then, there's sugar reduction. In today's sugar-wary environment, processors are keen to keep sugar levels in check, even in sauces. "Like any food, when we take out some of the sugar in the sauce, we need to add back bulk to the formula," Radermacher explains. She says Cargill's label-friendly starches are great for that task – not just replacing sugar's bulk, but also contributing to emulsion stability. The result is a reduced-sugar sauce that still maintains the creamy, smooth appearance consumers expect.

Reformulation made simple

Advances in technology have led to tremendous improvements in label-friendly starches, yet formulators are sometimes understandably reluctant to tinker with long-standing recipes.

"Label-friendly reformulation can be intimidating," Radermacher admits. To make it a little easier, Cargill developed a seven-step program, complete with on-site training, that guides formulators through the process.

"Many times, customers come to us with formulas that are overdeveloped," Radermacher notes. "They'll have multiple gums, starches and emulsifiers in the recipe – and in most cases, they don't need all those ingredients." The trick is unwinding what each of those components contributes to a specific application and determining which ones are vital to the formula. Working with a knowledgeable ingredient supplier can give customers peace-of-mind as they streamline decades-old recipes.

"Consumer desires for products made with fewer ingredients, familiar components and greater transparency are here for the long haul," Radermacher predicts. "Fortunately, our label-friendly toolbox continues to grow and get better."

Cargill's SimPure™ portfolio already includes potato and tapioca starch solutions ideal for a wide range of mild-processing conditions. With the addition of waxy corn starches SimPure™ 94400 and 94405, processors now have label-friendly options designed for moderate-to-severe processing conditions, and more starches are on the way. Up next are label-friendly starches developed for the extreme needs of the dairy market. Further down the road, the company is exploring different botanical sources with additional functional properties.

"Starch is such a basic ingredient, we sometimes forget how important it is to achieving the right texture, mouthfeel and viscosity in a final product," Radermacher notes. Fortunately, Cargill's R&D pipeline is packed with additional promising, label-friendly starches, ensuring customers will soon have even more options to address their most difficult textural challenges.

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