

White Paper

Next-Gen Rice Flours Deliver Gluten-free Baking Excellence

Proprietary Japanese Rice Milling Process Gives Product Differentiation

Gluten-free Market. In the early years of gluten-free baking, home bakers and industrial formulators alike used the commonly available and familiar flours and starches to face the challenge of baking without wheat flours. While the gluten-free market was spawned by the imperative to provide food options for those afflicted with celiac disease and gluten intolerance, it was also driven by consumers who sought alternative diets to enhance health and wellness. Food industry observers opined that the gluten-free market's sudden popularity and spectacular growth would soon taper off when the faddists chased the next trend. This was reinforced by the fact that most gluten-free baked products that were introduced were mediocre at best, and more often, an unsavory treat.

Today, the gluten-free market has defied the predictions and sustained its growth globally, and more impressively in North America. With a projected CAGR of 10.4% through 2020, the latter will see the market grow from \$4.6 billion in 2015 to \$7.6 billion. This market will be driven by the sustained needs of the celiac and gluten-intolerant as well as a growing number of gluten-free full-time and part-time converts.

Bakery products comprise the largest segment of the gluten-free industry. Just as most gluten-free start-ups have stagnated or closed their doors, the major players have taken the plunge into this market after the earlier years of hesitation. This means that the next stage of competition will become more compelling and quality-driven. Superior quality entails the use of better, rather than more, ingredients.

Kumamoto Rice Flours are Truly Different. American Key Food Products (AKFP) has been active in this market since 2010, when it launched its proprietary premium cassava flour. It has become an increasingly successful, unique gluten-free ingredient that has proven its versatility in baking and snack applications. AKFP now brings to North America a new line of premium ingredients—superfine white and brown rice flours from Kumamoto Flour Milling Co. Ltd. Using a proprietary milling process, Kumamoto distinguishes its rice flours from all others currently available in the market.

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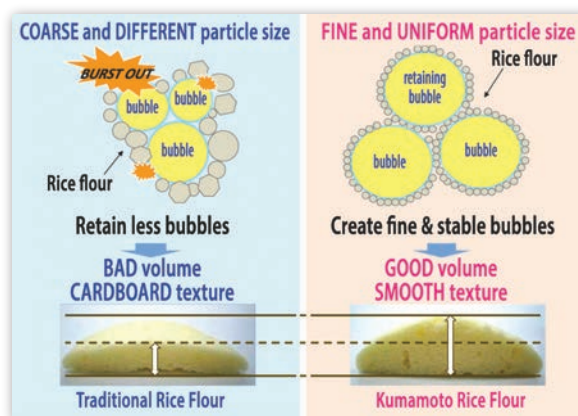
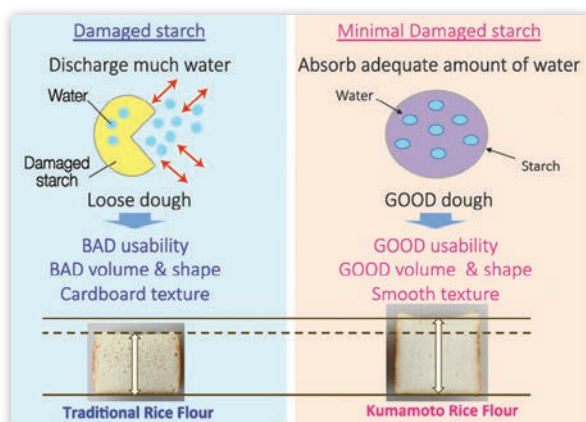
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These rice flours are processed from short-grain rice varieties, using exclusively whole rice grains and no broken rice kernels. This helps to enable the rice flours to attain the water absorption, viscosity and related functional characteristics necessary in gluten-free baking. Moreover, the starches in short-grain rice varieties have a higher amylopectin content relative to medium- and long-grain rice varieties. This translates to improved shelf life and freeze/thaw stability in baked goods versus medium- and long-grain rice flours.

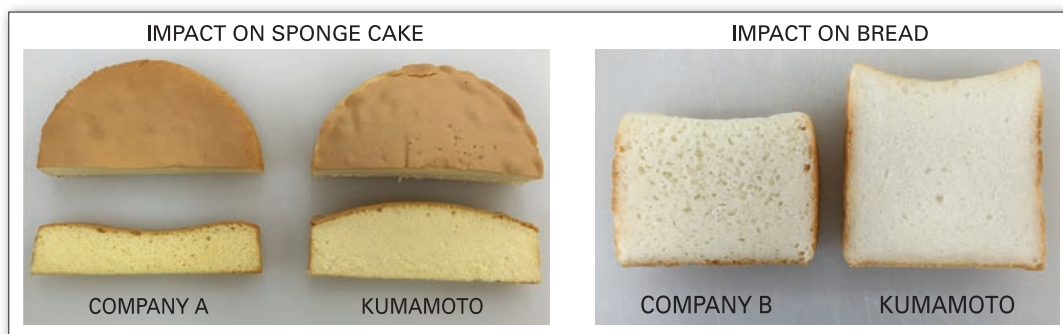
Kumamoto's special milling process also brings about a superfine granulation that allows for 90% of the flour particles to be sized at 70 μ m or less. Moreover, the particle size distribution is tighter than with most other flours. These combine to yield a benefit of higher rise in volume of baked products and a more uniform consistency in the crumb structure. They also contribute to a softer texture in gluten-free baked products.



Finally, Kumamoto's proprietary technology allows for the superfine particle size while keeping the level of damaged or gelatinized starch to a minimum. This also contributes to superior texture and crumb structure of baked products.

Kumamoto Rice Flours are demonstrably excellent for gluten-free baking, even as the sole flour/starch ingredient.

Extensive research and tests have shown that, when rice flours were used exclusively as the only flour or starch ingredient in a gluten-free dough mix, Kumamoto's rice flour outperformed other "superfine" flours in terms of the rise in breads and cakes, the softness of the texture and in the consistency of the crumb structure.



AKFP sells various essential gluten-free flours and starches wholesale to the U.S. food industry: King Lion Premium Cassava Flour, Kumamoto Rice Flours, Native Potato, Tapioca and Pea Starches and Clean Label Starches for the Baking, Snack and Petfood Industries.