



Label-Friendly Loaves:

Cargill finds simple solution to remove ADA, SSL, DATEM and MGDs

It seems no segment of the food and beverage industry is immune to consumer calls for cleaner labels. Certainly not the bread aisle. Who can forget the public outcry to remove azodicarbonamide (ADA) after blogger Vani Hari noted its use in yoga mats?

Faced with mountains of negative headlines, bakers scrambled to get ADA out of their formulations. They survived the ensuing publicity nightmare, but when the dust settled, many took a harder look at their entire ingredient statement.

The ADA scenario demonstrated in dramatic fashion that consumers wanted recognizable ingredients common to food and shorter ingredient lists. A quick look at many commercial bread labels revealed three frequently used ingredients burdened with chemical-sounding names: sodium stearoyl lactylate (SSL), DATEM (diacetyl tartaric acid esters of mono- and diglycerides), and monoglycerides (MGDs). Long used by the industry as dough conditioners to soften bread and extend shelf life, these ingredients worked great, but their unfamiliar names may have prompted some consumer unease.

Cargill's Certified Master Bakers Bill Gilbert and Tim Christensen set to work, looking for a solution. They had realistic goals, hoping to find a replacement for just one of the troublesome ingredients. Two years and hundreds of tests later, the Cargill team has far exceeded its initial expectations. They developed a replacement strategy for all four of the dough conditioners – without adding a single new ingredient to the product label.

Gilbert and Christensen started their quest by delving into Cargill's existing product line. Soy lecithin, an ingredient already in use in most commercial breads, was a natural place to start. A simple emulsifier, soy lecithin is well known for its ability to hold oil and water in suspension. The master bakers soon discovered the ingredient offered other previously unknown benefits, including moisture retention.

"Initially, we were just trying to replace monoglycerides," Christensen recalls. "At best, we had modest expectations that lecithin might be one part of a solution."

Then the test results started rolling in. Control breads, made with traditional dough conditioners, were compared to dozens of loaves of bread made with different lecithin types. Christensen put the resulting loaves through a battery of analytical and trained sensory panel testing, evaluating the loaves at 7, 14 and 21 days. Analytical tests tracked hardness, gumminess, chewiness and checked moisture levels. Sensory panels rated characteristics like softness, texture and flavor. While many of those lecithin-formulated loaves didn't measure up, to Christensen's surprise, Cargill's premium soy lecithin appeared to perform nearly identical to the control loaves made with monoglycerides.

Gilbert's reaction? In a word: 'Ecstatic.'

"Numbers don't lie," Gilbert continues. "When we looked at the results after that first round of testing, it was clear we had both a liquid and a de-oiled soy lecithin that were consistently producing results nearly indistinguishable from our control loaves."

It turned out those premium lecithin products did a great job of holding water throughout the bread's shelf life. Energized by the results from their first round of testing, Christensen and Gilbert expanded the study to see if they could successfully remove another undesirable ingredient, DATEM. Ultimately, the expert duo found they could replace the entire dough conditioner package – ADA, SSL, DATEM and MGDs – by finding the right combination of enzymes and lecithin.

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“We were amazed at our results,” Christensen admits. “We found we could produce loaves nearly indistinguishable from those with all four of the standard dough conditioner ingredients. Because both enzymes and lecithin are commonly found on most commercial bread ingredient statements, we did it without adding a single new ingredient to the formula.”

Christensen and Gilbert still weren’t done. As some customers wanted to avoid using major food allergens like soy, they set out to find solutions using sunflower lecithin, and more recently, the company’s new canola lecithin. In the end, they found the company’s premium sunflower and canola lecithin could be used as one-to-one replacements for soy lecithin.

“Our customers are especially excited about our new canola lecithin,” Gilbert notes. “It’s a label-friendly, non-GMO option that does not require allergen labeling, and is backed by a very reliable supply chain – all at an affordable price.”

Two years and hundreds of test loaves later, Gilbert and Christensen are confident they have the right solution for most any dough conditioner replacement need. Whether bakers are looking to replace a single ingredient like DATEM; want a total solution to remove all four of the dough conditioners; or have already simplified their label, but are not happy with the resulting finished product, Cargill has the answer.

“Each situation requires a different enzyme/lecithin combination,” Gilbert acknowledges. “We’ve done the testing and analysis, so we know which enzyme combinations work best with our lecithin products in each of these situations; thereby speeding reformulation.”

Cargill’s comprehensive assessment has already paid dividends for several bread makers, who have partnered with the company to validate enzyme and lecithin solutions in their own formulations. The resulting label-friendly loaves are already on store shelves.

“When we began looking at lecithin in 2014, we never imagined we’d be able to eliminate the four most undesirable ingredients in a standard commercial bread loaf,” Gilbert admits. “Our work with lecithin gives consumers what they want – shorter, understandable ingredient lists. Equally important, it gives bakers what they need: cost-effective formulations that consistently produce high-quality, 21-day shelf-stable products.”