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bake

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IBIE's record-setting masterpiece

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BLACK SEED BAGELS

Why bagels are making a comeback



The Science of FRYING DONUTS

The first rule of donut fry shortenings is stick with a hard fat. “A more solid, harder shortening helps with fat migration and weeping, which in turn help with better shelf life and stability,” says Peter Kolavo, executive chef for South Chicago Packing, a leading shortening manufacturer that features a new line of bakery shortenings including All Donut.

“If the fat is too liquid and soft, it can blot and get soggy,” Kolavo continues. “If the fat is too hard, it may leave a waxy feeling on the palate, so it is good to go with a happy medium like lard or tallow. They do not polymerize or form gums as readily as liquid shortenings and hold up better under continuous high heat cooking applications.”

Roger Daniels, vice president of research, development and innovation at Stratas Foods, concurs that hard fats, including high oleic soybean shortening, are optimum for frying donuts.

“If you have a hard fat, that prevents more oil from transferring to the surface of the donut,” Daniels says. “Also, the longer the donut sits under a heat lamp, the more grease is going on the donut. A donut is a sponge. But a hard fat solidifies post-fry.”

Qualisoy oils expert Frank Flider, speaking at a special presentation by Qualisoy at the International Baking Industry Exposition (IBIE), said that recent functionality tests revealed that high oleic soybean shortening, made with a blend of liquid and fully hydrogenated oils, is the perfect US-grown, high-stability oil for many baking and frying applications.

Fully hydrogenated oils are individual fats and oils, or blends of fats and oils, that are hydrogenated to complete or near com-

plete saturation, according to Qualisoy. The full hydrogenation process strives to convert all unsaturated fatty acids; thus, fully hydrogenated oils have been approved by the US Food and Drug Administration for use in edible products.

High oleic soybean shortening produced donuts that are similar in texture, interior grain, spread, height and size to partially hydrogenated soybean oil in both cake and yeast donut tests, according to the functionality study.

“This is a true drop-in substitute for donut frying,” Flider says. “Overall, longer fry life is among the many benefits. We are helping to support American agriculture and the environment.”

In the cake donut study, high oleic soybean oil shortening produced donuts with star-shaped holes similar to those produced with partially hydrogenated soybean oil. Oil weeping was second lowest with donuts fried with high oleic soybean shortening.

Oil weeping occurs when oil leaches out of the donut providing an oily, possibly soggy, taste and mouthfeel. It can lead to inconsistent covering of glaze or powdered sugar. Additionally, excessive weeping results in undesirable greasy and stained packaging.

Shelf life considerations

Kolavo points out that, when it comes to shelf life, bakers should recognize that nothing lasts forever. “Shortenings should be used and replenished regularly,” he says.

“This varies widely depending on what is being fried, how much absorption or pick-up the products have, and what if any filtering/maintenance is being done. Without loss of generality, more saturated fats like palm, tallow, and lard are more resis-



WHAT MAKES ONE DONUT BETTER THAN THE NEXT?

When assessing donut quality, we often think in terms of appearance, color, oil uptake, flavor, mouthfeel and texture.
SOUTH CHICAGO PACKING

tant to oxidation, polymerization and thermal stress. They hold up better under extended high heat frying applications.”

If one is regularly topping off and filtering their oil, it may be able to go a very long time before needing to be totally replaced, Kolavo says. However, if one is frying something highly spiced, with lots of particulate, and not filtering, that would need more frequent replacement. “Some people decide when to change out based on flavor and color, some use Total Polar Material testing, some go by length of time.”

Daniels of Stratas points out that it all starts with the flavor you want to deliver. Factors to consider are smell, look and taste. “There is typically a break-in period before you reach the ‘sweet spot’ for optimal frying time,” he adds. Be warned. Once foaming or smoking occurs, that is evidence of breakdown of the frying oil. “We like to guide people to: What does it smell like? What does it taste like?” Daniels says.

Kolavo agrees that it is vital to pay attention to where you are in your cycle. Many fats and oils are at their best when they are slightly “broken in,” he says. “Don’t be afraid to do a little mad science and keep tasting and testing.”

New product innovations

At IBIE, Stratas Foods presented what it calls two industry-changing products, Apex and Superb Select 1020. Released in 2018, Superb Select 1020 is a soy-based, palm free shortening made without hydrogenated oils that substantially reduces saturated fats compared to most shortenings. Stratas Foods brings this product innovation for the foodservice area (for retail bakeries) under the brand names Sweetex Golden Flex for icing and Primex Golden Flex for all-purpose needs.

“These work like PHOs with the same functionality,” Daniels says. “We are able to achieve this through simple blending and processing techniques. There is a nice clean aroma and the clean taste associated with US-grown soybeans. This is the freshest product you can find.”

Other companies presented new innovations at IBIE. Bunge Loders Croklaan introduced its complete portfolio of Vream Elite premium shortenings. “Shortening is a key ingredient in bakery, but bakers still face challenges in finding products that are easy to use while also delivering great sensory experiences across today’s most popular applications,” says Mark Stavro, senior director of marketing. “Vream Elite shortenings are made from high-stability soybean oil. They deliver tremendous functionality whether you’re working in cool or warm conditions and are optimized by application to deliver fantastic appearance, texture, and mouthfeel.”

Bunge Loders Croklaan is launching three new Vream Elite shortenings to build on the existing line of icing, donut and tortilla shortenings that were launched earlier this year. “Early adopter feedback for Vream Elite is very positive. Customers are excited about its sensory and functionality benefits and how it’s tailored to meet specific needs across icings, cakes, pies, cookies, donuts and tortillas,” says Tim Surin, vice president of food processor sales for North America.

Looking at the available options of shortenings, Kolavo says that everyone’s setup and equipment are unique, so you must think for yourself and pay attention. “You have to test what works best for you and try your best to write down the variables. Donuts are an art and a science, and there are some surprising things that can happen.”