# FOOD INSIDER JOURNAL

Clean Label Strategy & Formulation

Brought to you by: Natural Products INSIDER





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# Fat's No Longer the 'F' Word

or years, the fat content in food—both at retail and foodservice—has been maligned for its association to increased risk of heart disease, obesity and type 2 diabetes. Saturated fats, found naturally in butter, cheese, red meat and other animal-based foods, have been in the crosshairs of the medical community because they can increase levels of lowdensity lipoprotein (LDL, or "bad") cholesterol. *Trans* fats also have been linked to increased LDL and decreased high-density lipoprotein (HDL or "good") cholesterol.

Trans fats have been so maligned that FDA stripped partially hydrogenated oils (PHOs), the main source of artificial trans fats, of their GRAS (generally recognized as safe) status and banned their use in most food products by June 18, 2018. (FDA recently extended the deadline for certain foods to allow for products produced prior to June 18 to work their way through distribution channels.) The World Health Organization (WHO) also jumped on the anti-trans bandwagon on May 24, 2018, calling for their elimination from the global food supply by 2023—a move the agency said would reduce the number of cardiovascular disease (CVD)-related deaths associated with trans fat intake.

However, not all fats are created equal, and it's now OK to utter the word "fat" without being put in a nutritional timeout. The 2015-2020 Dietary Guidelines for Americans (DGAs) suggest a healthy eating pattern should include consumption of plant-based oils such as canola, corn, olive, peanut, safflower, soybean and sunflower, as well as oils naturally present in nuts, seeds, seafood, olives and avocados.

Consumer demand for products made with natural ingredients is occurring across all food and beverage categories, particularly for indulgent goodies that contain higher fat content. The good news is fat and oil technologies are keeping pace with the ever-dynamic needs and preferences of today's marketplace, and brands are delivering innovative products made with healthy fats and oils that don't compromise taste or function.

This issue of Food Insider Journal takes a deep dive into these ingredients and examines how they are being used in innovative products to bolster specific food and beverage categories. Our Category Insights focuses on the bakery sector, where PHOs contribute to enhanced texture, shelf life and flavor stability of baked goods.

Cheers,



@judiebizz



The good news is fat and oil technologies are keeping pace with the everdynamic needs and preferences of todav's marketplace. and brands are delivering innovative products made with healthy fats and oils that don't compromise taste or function.



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by Judie Bizzozero

here's no denying the fact that fats and oils make foods taste better, especially when it comes to indulgent goodies such as a freshly fried doughnut dipped in glossy chocolate icing or crispy sea salt kettle chips with a side of creamy dip. In addition to enhancing flavor, fats and oils have many functional duties such as providing texture, particle suspension, mouthfeel, stability and shelf life in products, including sauces, dressings, bars, dairy products and more.

The release of the 2015-2020 Dietary Guidelines for Americans (DGAs) marked a key turning point for public opinion of the healthfulness of food by placing more emphasis on types of foods and eating patterns rather than an actual dietary component.

However, not all fats and oils are created equal, and today's consumers are looking for products with healthy halos they can feel good about putting into their bodies. This demand is seen across nearly every food and beverage category, and brands are responding to the trend by delivering innovative products made with betterfor-you fats and oils that don't compromise taste or function.

## Fat is No Longer the 'F' Word

For years, fat has been maligned for its association to increased risk of heart disease, obesity and type 2 diabetes. Unsaturated fats such as monounsaturated and polyunsaturated fats are generally associated with positive health benefits, while saturated fats are associated with negative health outcomes because they can

increase levels of low-density lipoprotein (LDL, or "bad") cholesterol. *Trans* fats have been linked to increased LDL and decreased high-density lipoprotein (HDL or "good") cholesterol.

However, the release of the 2015-2020 Dietary Guidelines for Americans (DGAs) marked a key turning point for public opinion of the healthfulness of food by placing more emphasis on types of foods and eating patterns rather than an actual dietary component deemed a public health concern by past guidelines. Key recommendations included reducing *trans* fats and limiting saturated fat intake to less than 10 percent of daily calories.

According to the guidelines: "Strong and consistent evidence shows that replacing saturated fats with unsaturated fats, especially polyunsaturated fats, is associated with reduced blood levels of total cholesterol and LDL. Additionally, strong and consistent evidence shows that replacing saturated fats with polyunsaturated fats is associated with a reduced risk of CVD [cardiovascular disease] events (heart attacks) and CVD-related deaths."

The DGAs suggest a healthy eating pattern should include consumption of plant-based oils such as canola, corn, olive, peanut, safflower, soybean and sunflower, and oils naturally present in nuts, seeds, seafood, olives and avocados.



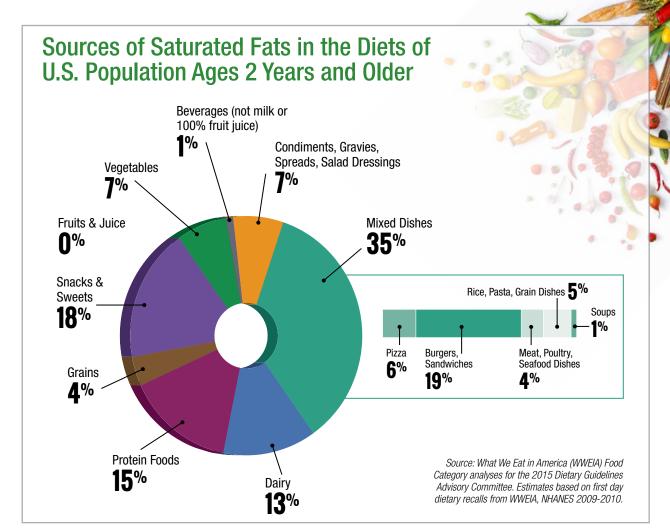
About half of all consumers say they are more likely to purchase a product with a 'no saturated fat' claim. Our research also shows there is a strong correlation between a low saturated fat claim and perceived healthfulness of a product.

- Jamie Mavec, marketing manager, Cargill

Tropical oils such as coconut, palm kernel and palm were not included in the suggested healthy eating pattern because they have high amounts of saturated fatty acids and are therefore classified as solid fats rather than oils.

Results of a 2017 proprietary quantitative survey of U.S. grocery shoppers commissioned by Cargill found fat is the second most important ingredient consumers monitor on food product labels, meaning the type of fat claim can impact the likelihood for consumers to purchase a product. "About half of all consumers say they are more likely to purchase a product with a 'no saturated fat' claim," said Jamie Mavec, marketing manager, Cargill. "Our research also shows there is a strong correlation between a low saturated fat claim and perceived healthfulness of a product."

Indeed. The International Food Information Council (IFIC) Foundation's 2018 Food & Health Survey revealed more than half of U.S. consumers viewed saturated fats as unhealthy, while nearly 70 percent of consumers understood the healthy benefits of omega-3 fatty acids. Data from Packaged Facts' 2017 "Food Formulation Trends: Oils and Fats" report found *trans* fats are avoided the most (35 percent) by consumers,



Top Fats and Oils Consumers Seek in Processed Foods

Olive oil	33.6%
Vegetable oil	17%
Canola oil	16.5%
Butter	14.1%
Coconut oil	14.1%
Corn oil	9.5%
Margarine	9.4%
Sunflower oil	9.2%
Peanut oil	8.1%
Sesame oil	8.1%
Avocado oil	7.6%
Flaxseed oil	7.1%
Soybean oil	<b>7</b> %
Vegetable shortening	6.4%
Walnut oil	5.5%
Safflower oil	<b>5</b> %

Source: Packaged Facts National Consumer Survey, February/March 2017.







followed by saturated fats (29 percent), partially hydrogenated oils, or PHOs, (24 percent), margarine (21 percent) and vegetable shortening (18 percent). When it comes to the fats and oils consumers prefer when purchasing processed foods, olive oil tops the list, followed by vegetable oil, canola oil, butter and coconut oil, respectively. The report noted also found butter, olive oil, generic vegetable oil, canola oil and corn oil were the top five fats and oils consumed in U.S. households in 2016.

# Where's the Whitespace?

The sheer volume of products debuted at Natural Products Expo West 2018 is evidence that brands are answering the demand for natural, minimally processed foods and beverages made with recognizable ingredients. This trend was seen across numerous categories—Bakery; Cookies & Candy; Dairy; Condiments, Oils & Salad Dressings; Cereal & Breakfast; Diet & Nutrition; Drinks; Frozen Food; Sauces, Spices and Seasonings; and Snacks.

Analysis from New Hope Network's NEXT Trend Database supports the industry's shift to healthier fats and oils. Looking back at all products exhibited at Natural Products Expos from 2013 to 2017, New Hope's NEXT Data & Insights team noted the number of products containing avocado, butter, coconut, medium-chain triglycerides (MCTs), palm, safflower, sunflower and vegetable oils witnessed 18 percent absolute growth over the period. Drilling down further, data revealed significant opportunity for certain better-for-you fats and oils among several key categories:

Avocado Oil: Products containing avocado oil experienced considerable market size growth in four categories: Condiments, Oils & Salad Dressings (794 percent); Snacks, Cookies & Candy (678 percent); Diet & Nutrition (107 percent); and Sauces, Spices & Seasonings (56 percent).

According to SPINS, sales of conventional shelf-stable avocado oils dropped nearly 84 percent, but sales of avocado sprays, mists and oil sprays grew 35 percent during the 52 weeks ending April 22, 2018. Products with natural positioning fared better; sales of natural avocado oil grew 44.1 percent while natural avocado sprays and mists increased 39.8 percent.

Butter: Consumers' affair with butter is no longer sinful because it provides superior flavor in a wide array of applications, delivers a clean label option to shorten ingredient decks and offers a highly functional replacement for PHOs.

Mintel's "Butter and Yellow Fats 2018" report found while butter and margarine brands are cleaning up their labels to improve natural attributes, there's still hard work ahead to convince consumers of the health benefits. The report suggested a more holistic approach to clean label that encompasses sustainability and animal welfare, and embraces current "free from" trends might give butter and margarine brands a differentiation point.

Products made with butter exhibited at Natural Products Expos from 2013 to 2017 witnessed increased market size growth in four categories: Cereal & Breakfast Foods (632 percent); Diet & Nutrition (67 percent); Frozen Food (12 percent); and Bakery (9 percent).

According to SPINS, overall sales of conventional butter increased 3.9 percent and sales of conventional margarine and plant-based spreads fell nearly 4 percent during the 52 weeks ending April 22, 2018. Conversely, butter positioned naturally grew 12.6 percent, while margarine and plant-based spreads with natural positioning grew 17.6 percent over the same time. Interestingly, sales of ghee grew 68.4 percent while sales of flavored ghee soared 233 percent.

Coconut Oil: Coconut oil has emerged as a trending ingredient due to its nonhydrogenated properties and versatility in numerous applications. Leaslie Carr, marketing manager at AAK USA, cited data from Mintel GNPD that found use of coconut oil in U.S. food witnessed a compound annual growth rate (CAGR) of 32 percent in the 5-year period from 2013 to 2017. "Data from Health Focus International's 2018 Global Trend Study Consumer found perception for coconut oil is also favorable, with 57 percent indicating coconut oil is a good fat," she added. Furthermore, 34 percent of consumers specifically seek food products made with coconut oil, which can replace butter in the vegan diet, reported Packaged Facts.

NEXT data revealed products containing coconut oil exhibited at Natural Products Expos from 2013 to 2017 experienced impressive market size growth: Diet & Nutrition (467 percent) and Cereal & Breakfast Foods (311 percent).

*MCT Oil:* MCT oil, which contributes to increased focus on energy and mental focus, has been especially prevalent in the sports nutrition sector, but it's also being called out in other products like coffee and creamers. According to NEXT data, MCTs are emerging in a number of categories, including Snacks, Cookies & Candy, Cereal & Breakfast Foods, Dairy and Drinks.

Safflower and Sunflower Oils: Plant-based ingredients such as safflower and sunflower oils are gaining considerable traction because they resonate with health-minded consumers including vegans, vegetarians, flexitarians and those looking for clean label food and beverage choices, according to Mintel.

Safflower oil's versatility makes it an ideal solution for food manufacturers searching for healthy alternatives to saturated or hydrogenated oils. Sunflower oil, which is high in vitamin E, is a combination of monounsaturated and polyunsaturated fats with low saturated fat levels. These non-GMO (genetically modified organism) oils boast neutral flavor profiles, making them ideal for frying, snacks, salad dressings, protein bars and more.





# 34 percent of consumers specifically seek food products made with coconut oil, which can replace butter in the vegan diet,

reported Packaged Facts.

Bakery products containing safflower oil exhibited at Natural Products Expos from 2013 to 2017 saw market growth of 70 percent while the Snacks, Cookies & Candy category grew 25 percent. Overall combined sales of conventional safflower oil, sprays and mists dropped a staggering 85 percent during the 52 weeks ending April 22, 2018, while sales of safflower oil with natural positioning grew 7.4 percent during the period.

That said, it may be sunflower oil's time to shine. NEXT data found products containing sunflower oil exhibited at Natural Products Expos from 2013 to 2017 experienced market growth in three categories: Condiments, Oils & Salad Dressings (244 percent); Diet & Nutrition (65 percent); and Cereal & Breakfast Foods (38 percent). SPINS data revealed sales of sunflower oils with natural positioning increased 50 percent during the 52 weeks ending April 22, 2018.

Mavec cited growing demand from food manufacturers for high oleic sunflower oil due to its excellent functional performance and healthy halo. "The high levels of stability and performance give this specialty oil a longer fry life than generic canola oil, while maintaining the desired flavor profile and low saturated fat content," she said.



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Although food manufacturers and restaurants have reduced the amount of artificial *trans* fats in many foods in recent years, these fats can still be found in some processed foods such as desserts, microwave popcorn, frozen pizza, margarines and coffee creamers.



## **Trans** Fat Ban Goes Global

Artificial *trans* fatty acids are found in the PHOs used in some margarines, snack foods and prepared desserts as a replacement for saturated fatty acids. Although food manufacturers and restaurants have reduced the amount of artificial *trans* fats in many foods in recent years, these fats can still be found in some processed foods such as desserts, microwave popcorn, frozen pizza, margarines and coffee creamers. Naturally occurring *trans* fats found in small amounts in some meat and dairy products do not fall under the ban.

*Trans* fats have been shunned for years because of their link to increased risk of CVD, stroke and the development of type 2 diabetes. In 2015, FDA determined PHOs, the primary food manufacturing source of artificial *trans* fats, are not GRAS (generally recognized as safe), originally giving food and beverage manufacturers until June 18, 2018, to remove them entirely from their products. While that deadline remains the date after which manufacturers cannot add PHOs to foods, on May 24, 2018, FDA extended the compliance date to Jan. 1, 2020, for food products produced prior to June 18, 2018, to allow for an orderly transition in the marketplace through distribution channels. At the same time, FDA denied a food additive petition from the Grocery Manufacturers Association (GMA) requesting approval for certain limited uses of PHOs. To allow for time for reformulation, the agency extended until June 18, 2019, the compliance date to stop manufacturing foods with these specific, limited-petitioned uses of PHOs, and until Jan. 1, 2021, for the products to work their way through distribution.

In May 2018, The World Health Organization (WHO) followed the U.S. lead and issued a step-by-step guide called REPLACE to eliminate industrially produced *trans* fatty acids from global food supply by 2023, a move the agency said would reduce the number of CVD-related deaths associated with *trans* fat intake.



**REPLACE** provides six strategic actions to ensure the prompt, complete and sustained elimination of industrially produced *trans* fats from the food supply:

**RE**view dietary sources of industrially produced *trans* fats and the landscape for required policy change.

Promote the replacement of industrially produced *trans* fats with healthier fats and oils.

Legislate or enact regulatory actions to eliminate industrially produced *trans* fats.

Assess and monitor *trans* fats content in the food supply and changes in *trans* fat consumption in the population.

<u>C</u>reate awareness of the negative health impact of *trans* fats among policy makers, producers, suppliers and the public.

Enforce compliance of policies and regulations.





Changes in production processes and methods of incorporation to ensure even distribution into fats and oils are frequently required to preserve the integrity of the more sensitive natural ingredients.

— James Jones, Ph.D., vice president, customer innovation, AAK USA WHO determined in 2016 an estimated 39.5 million (72 percent) people worldwide died from noncommunicable diseases (NCDs), with approximately half of these deaths caused by CVDs. About 610,000 of the 39.5 million people were from the United States and died from heart disease, according to the Centers for Disease Control and Prevention (CDC). Modifiable behaviors—unhealthy diet, low to no exercise, and tobacco and excessive alcohol use—are contenders of CVDs, but of concern to WHO is the high intake level of dietary saturated fatty acids and *trans* fatty acids, both of which correspond with increased risk of CVDs.

WHO now recommends total *trans* fat intake be limited to less than 1 percent of total energy intake, which translates to less than 2.2 g/day in a 2,000-calorie diet. *Trans* fats increase levels of LDL cholesterol and decrease levels of HDL cholesterol. What's more, diets high in *trans* fats increase heart disease risk by 21 percent and deaths by 28 percent., the agency noted. Replacing *trans* fats with unsaturated fatty acids decreases the risk of heart disease, in part, by ameliorating the negative effects of *trans* fats on blood lipids. In addition, there are indications that *trans* fats may increase inflammation and endothelial dysfunction.

## **Formulation Challenges & Solutions**

Cost and functionality are critical areas brands must consider when making the switch to clean fats and oils. In some cases, removal of certain fats is straightforward and results in minimal extra cost; in other cases, fats can have a major functional role, and therefore must be replaced with other ingredient or processing solutions.

PHOs have been the workhorses in many processed food products including desserts, baked goods, microwave popcorn products, frozen pizzas, margarines, vegetable shortenings, snack foods, coffee creamers, refrigerated dough products and ready-to-use frostings. Reformulating these products to no longer include PHOs can affect flavor, texture, shelf life or consistency of the finished product.

"Changes in production processes and methods of incorporation to ensure even distribution into fats and oils are frequently required to preserve the integrity of the more sensitive natural ingredients," said James Jones, Ph.D., vice president, customer innovation, AAK USA. He cautioned the cost per pound and dosage to achieve the desired effect with natural ingredients is generally higher and usually commands a premium price.





Reformulating these products to **no longer include PHOs** can affect **flavor, texture, shelf life or consistency** of the finished product.



PHOs provide structure and tenderness in baked goods such as cakes and cookies, and help slow staling and improve shelf life in products like breads and rolls.

"Non-PHO functional replacements tend to be more susceptible to oxidation than their PHO counterparts," he said. "This makes getting away from the stronger, less-expensive synthetic antioxidants such as BHA, BHT and TBHQ—historically used for optimal antioxidant and free radical scavenging—an even bigger challenge. This is where intimate knowledge of customer strategy, consumer trends [and ingredient] meet."

For example, natural oil-soluble antioxidants such as green tea extract, rosemary extract, vitamin E and carotenoids such as beta-carotene and lycopene are beginning to replace the less label-friendly, chemical-sounding synthetics. Citric acid, long known for its metal-chelating ability to reduce oxidation initiators as well as vitamin C as a water-soluble antioxidant in emulsions, also may play a role in helping the industry replace the more oxidatively stable PHOs with clean label solutions.

PHOs provide structure and tenderness in baked goods such as cakes and cookies, and help slow staling and improve shelf life in products like breads and rolls. Fats and oils also provide tenderness, flavor, lubricity and structure to products, so depending on the role or roles they play, certain functionality traits may need to be replaced with other ingredients.

John Neddersen, senior application scientist, fats and oils, emulsifiers, DuPont Nutrition & Health, said the switch from an oil with high saturated fat to low saturated fat may require a change in the antioxidant system, as well as the need for an emulsifier or hydrocolloid system to help build structure when the structuring fat is removed.

"For example, cakes made with solid shortening often have a different structure and lubricity than cakes made exclusively with oil," he said. "Also keep in mind the production of foods may need to be adjusted. For example, there was flexibility in mix time for icings or frostings made with *trans* fats. Some of the nonhydrogenated fats are more prone to overmixing, so closer attention should be paid to mix times otherwise the amount of air may decrease, and the icing will not be as fluffy."

Bakery isn't the only category affected by demand for healthier fats and oils. Margarines, spreads and icings also have tremendous opportunity for clean label makeovers because they contain a high percentage of fats and oils, and partially hydrogenated and saturated fats. Neddersen added.



 John Neddersen, senior application scientist, fats and oils, emulsifiers, DuPont Nutrition & Health



Consider the need for a structuring fat for plant-based cheese products when dairy fats are not an option. The type and source of vegetable fat selected is important to deliver on both the physical and sensorial properties of the application.

> - Vineet Jindal, Ph.D., global customer innovation manager, plant-based dairy, AAK USA

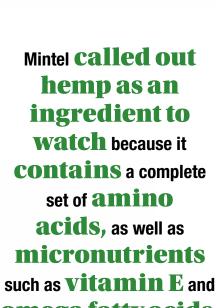
Dairy products—widely recommended as part of a healthy diet mainly because they are a good source of calcium, protein, minerals and fat-soluble vitamins—also can contain high amounts of saturated fats and cholesterol that can increase the risk of coronary heart disease. For this reason, brands are turning to better-for-you fat and oil options that won't sacrifice flavor and function.

For example, the melt profile of a cheese product is extremely important and developers must consider physical and sensorial requirements. "Consider the need for a structuring fat for plantbased cheese products when dairy fats are not an option. The type and source of vegetable fat selected is important to deliver on both the physical and sensorial properties of the application," said Vineet Jindal, Ph.D., global customer innovation manager, plant-based dairy, AAK USA. "If you are developing a product with a delicate flavor profile, you will need a fat/oil that doesn't mask or interfere with the desired flavor profile."

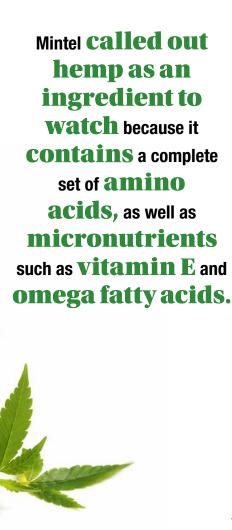
## **Hemp on the Horizon?**

Fat and oil technologies are keeping pace with the ever-dynamic needs and preferences of today's marketplace. Mintel noted the preference for natural, simple and flexible diets is leading consumers to seek more fruits, vegetables, grains, seeds, herbs and other plantbased ingredients within the products they purchase.

The market researcher called out hemp as an ingredient to watch because it contains a complete set of amino acids, as well as micronutrients such as vitamin E and omega fatty acids. Mintel noted hemp oil has grown in popularity and suggested it could be the next "super oil" for margarine brands looking to add on-trend ingredients to meet consumer demand for plant-based, free-from and high-protein foods.



June 2018



Healthy Fats & Oils Fuel Produc



Sugar Reduction

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# by Melissa Kvidahl Reilly

at: friend or foe? This has been the question on consumers' minds for years, and the answer has shifted over time. First came the war on fat, which placed fats and oils squarely at the center of America's obesity crisis, encouraged consumers to seek out fat-free alternatives to their favorite goods, and labeled all fat as unhealthy and even dangerous. Then, after decades of avoiding fats altogether, consumers began to learn more, and their opinions started to change.

Whole milk sales are up 11 percent, even as skim milk sales dip 14%, showing fat content isn't as important

to consumers.

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According to Packaged Facts' 2017 report "Food Formulation Trends: Oils and Fats," many catalysts contributed to this evolution. First, the heat on sugar is giving fat some breathing room (not to mention the somewhat dramatic finding that in the 1960s, the Sugar Research Foundation paid Harvard scientists to publish results that blamed fat, not sugar, for heart disease). Plus, trends favoring real and whole foods are contributing to a greater awareness that people eat foods and ingredients, not the nutritional components listed on the Nutrition Facts panel; this further removes some stigma from naturally occurring fats like those found in whole milk and butter.

According to a 2015 report from the Credit Suisse Research Institute, "Fat: The New Health Paradigm," consumers prefer products with natural and unprocessed fats (both saturated and monounsaturated), despite medical recommendations that have long encouraged reducing saturated fats and cholesterol (while placing no limits on polyunsaturated fats [PUFAs] and carbohydrates). It also speculated consumers were on the right track, which physicians weren't yet preaching, since 40 percent of nutritionists and 70 percent of general practitioners surveyed believed eating cholesterol-rich foods has damaging cardiovascular effects—which simply isn't true, the researchers noted.

So, where are consumers getting their information? Instead of their health care providers, consumers' preference for healthier and whole food fats is largely thanks to the clean label movement. The "Fat: The New Health Paradigm" report found global consumption of butter is growing at a rate of 2 to 4 percent annually. Whole milk sales are up 11 percent, even as skim milk sales dip 14 percent, showing fat content isn't as important to consumers.

Healthy Fats & Oils Fuel Product Innovation

What consumers do seem to be wary of, though, is *trans* fat. Mintel's 2016 "Better-for-you Eating Trends: Spotlight on Real" report found today's health-conscious consumers are shying away from *trans* fat at a rate of 45 percent. The absence of this ingredient is even more important to consumers than other clean label villains like artificial preservatives (38 percent of consumers avoid) and artificial flavors (35 percent avoid).

At the same time, Katlin Smith, founder and chief executive officer of Simple Mills, noted the popularity of the ketogenic diet is helping consumers see that not all fat is bad. "Staples in the keto diet are low carb, high fat and sensitivity to what fats you are consuming," she said. Finally, consumers are beginning to realize some fats can make positive health contributions and fat can be a "functional macronutrient," Smith said. Consumers also have learned the Mediterranean diet, rich in olive oil, can be a pathway to better health.

The popularity of omega-3 fatty acids is another nod for "healthier" fats. According to Food Decision 2016: Food & Health Survey, commissioned by the International Food Information Council (IFIC) Foundation, 37 percent of consumers try to consume omega-3s. And the Council for Responsible Nutrition's (CRN) 2017 Consumer Survey on Dietary Supplements found 21 percent of supplement users—now 170 million strong and 76 percent of the adult population in the United States—take omega-3 fatty acid supplements.

With the focus on "good" fats taking center stage, negative connotations are reserved specifically for "bad" fats like *trans* fats, reported Packaged Facts. Following *trans* fats in unpopularity are saturated fats (avoided by 29 percent of consumers), partially hydrogenated oils (PHOs) (avoided by 24 percent) and vegetable shortening (avoided by 18 percent).

It wasn't long before legislation caught up with the trends. In recognition of the fact that *trans* fat is a major contributor to heart disease in North America, FDA decided in 2015 to rescind its GRAS (generally recognized as safe) status, giving the food industry three years to remove it from the food supply. FDA estimates the complete removal of *trans* fats from the American diet could prevent 20,000 heart attacks and 7,000 deaths from heart disease annually. So, starting June 18, 2018, all food processors must nix *trans* fats from their ingredients lists. This includes PHOs, which present a unique challenge for bakery brands that have relied on it in the past. FDA recently announced it will allow industry to phase out the trace amounts used in certain products by 2021.



Staples in the keto diet are low carb, high fat and sensitivity to what fats you are consuming.





With the focus on "good" fats taking center stage, negative connotations are reserved specifically for "bad" fats like trans fats, reported Packaged Facts.



## **Impact on Bakery**

With low-fat claims no longer compelling shoppers to avoid certain products, what becomes important is which fats and oils are used. For the bakery category, which arguably has the biggest reliance on the texture and shelf stability that fats provide, the phasing out of PHOs has made a big impact. And shoppers are paying attention to what comes next.

According to Smith, PHOs provided many benefits to commercial bakers, including shelf stability and resistance to oxidation and rancidity over time. They're also cost-effective, helping keep the price of baked goods down.

"The main benefit to having partially hydrogenated oils in baked goods is that they provide a longer shelf life, so customers can keep the foods for an extended period," agreed Greg Tompkins, senior vice president, research and development (R&D) and commercialization for Otis Spunkmeyer. But it doesn't end there: "PHOs also give baked goods a lighter texture and richer flavor," he added, "which appeals to consumers looking for an indulgent snack."

As it turns out, even if bakers can come up with a preservative plan, the texturizing properties PHOs bring to baked goods is hard to imitate, noted Packaged Facts. The good news is the industry didn't wait until the last minute to reformulate. Many bakers and brands began to phase out *trans* fats in 2006, when mandatory labeling was initially implemented and the tides began to shift against PHOs. In fact, Tompkins isn't even sure FDA's new rule will make a bigger impact than the overall consumer trends have.

"With regard to PHOs, the research was so overwhelming that these were worse than any other saturated fat by a factor or two," he said. "When this was fully understood by consumers, the migration to cleaner fats and oils was instantaneous. It's safe to say that even without the U.S. ban on PHOs, their presence in the food system would have diminished dramatically over time."

FDA estimates *trans* fat has been reduced by 78 percent since 2003, while the Grocery Manufacturers Association (GMA) estimates it's more like 86 percent—further proof that the shift away from *trans* fats and PHOs began far sooner than the ban, giving brands time to explore alternative fats that appeal to clean label trends.

Indeed, sales trends favor clean label organic and natural baked goods over their conventional counterparts. Overall, sales of conventional bread, baked goods, cookies and snack bars grew just 0.6 percent during the 52 weeks ending April 22, 2018, SPINS reported. Those positioned naturally, on the other hand, grew 11.9 percent during that same time period. Organic offerings performed even better, with breads and baked goods posting 28 percent growth.

"Consumers have really started paying close attention to the ingredients found in their foods," Tompkins said. "Before making a purchase, many check the nutritional value and ingredient label, looking to spot familiar ingredients." So, while PHOs may be off limits in an indulgent category like bakery, consumers understand "certain fats are needed to retain the flavor," he added. Again, low fat and nonfat aren't priorities for bakery consumers so long as *trans* fats are kept at bay.



The main benefit to having partially hydrogenated oils in baked goods is that they provide a longer shelf life, so customers can keep the foods for an extended period

— Greg Tompkins, senior vice president, research and development and commercialization, Otis Spunkmeyer





Coconut has earned superfood status and, by extension, so has Coconut oil. Because it's a solid at room temperature, it's considered a butter replacement in home kitchens.

So how are bakers eliminating this ingredient? The easiest route, of course, was taken by brands who never used it to begin with. Pepperidge Farm, for example, removed all PHOs from its product lines over the past decade, with the last of its recipes changing over in 2016, said George Vindiola, vice president of R&D at Campbell Snacks. Certainly, this predated the FDA ruling, and was influenced by consumer trends.

"Consumers have understood for several years that PHOs are not desirable in any products," he said. "PHOs are near the top of the list when it comes to consumers' clean label wish lists."

The same goes for Enjoy Life Foods, which never used any PHOs in its bars, cookies and brownies due purely to consumer demand. "Our consumers have requested that we use no *trans* fats and no hydrogenated oils," said Joel Warady, general manager and chief sales and marketing officer at Enjoy Life Foods, "so we made certain that none of these ingredients exist in our products."

SnackWells, a hallmark low-fat cookie and cracker brand, responded to consumers' changing perceptions of fat by practically abandoning its marketing plan altogether, shifting its messaging away from low-fat and nonfat claims to emphasizing friendlier ingredients, a healthy indulgence, and being free from high fructose corn syrup (HFCS) and PHOs.

Otis Spunkmeyer markets the avoidance of PHOs in its baked goods with its "No Funky Stuff" promise. Some of the SKUs and portfolios always have relied on original recipes without PHOs, and others have been reformulated with the new promise, which means that in addition to eliminating PHOs, these products don't use any artificial colors or flavors, or HFCS. This decision was made partially thanks to the impending U.S. ban, but also because of the brand's continuing migration toward healthier versions of its foods.

"We wanted to cater to the growing number of consumers looking for indulgent-tasting foods made with better-for-you ingredients," Tompkins said.

## **Alternative Fats and Oils**

In an effort to move away from PHOs and *trans* fats, clean label and conventional brands alike are turning to other sources of fats and oils.

According to the Packaged Facts report, coconut has earned superfood status and, by extension, so has coconut oil. Because it's a solid at room temperature, it's considered a butter replacement in home kitchens. And, on the heels of growing popularity as a home cooking oil, it's been propelled into the commercial baking arena as a possible replacement for PHOs. Despite the fact that it's highly saturated, coconut oil enjoys a clean label reputation, with Packaged Facts reporting 58 percent of consumers think it's healthy and

14 percent specifically seek food products made with it.

When it comes to baked goods, coconut oil can be a worthwhile alternative, since it's solid at cooler temperatures and can lend itself well to fluffy textures needed in bakery—the same texture that PHOs previously provided, Smith noted. "Legacy formulas are always challenging to change, and removing PHO is problematic in that it's difficult to match," she explained, since PHOs provide not just texture, but also low costs and long shelf lives.



Our consumers have requested that we use no *trans* fats and no hydrogenated oils, so we made certain that none of these ingredients exist in our products.

— Joel Warady, general manager and chief sales and marketing officer, Enjoy Life Foods



"Solutions include adding an antioxidant to prevent rancidity and thereby helping extend shelf life, and replacing PHOs with other naturally saturated fats, like coconut and sustainable palm oil," Smith suggested. But even a clean label ingredient like coconut oil doesn't come without challenges.

On the upside, coconut oil can be used in solid or liquid form. "But there isn't really an in-between," explained Taryn Naranjo, dessert and pastry R&D chef at The Essential Baking Co. "A good example of this is with croissants. We use softened butter to laminate into the dough. If the butter were too cold or hard, then the lamination would be broken and spotty. You cannot get coconut oil to the same consistency as softened butter."

Coconut oil also can melt away during the baking process, since it has a low melting point, whereas butter, with a higher melting point, will stay suspended in the dough, Naranjo explained. This is an issue that plagues manufacturers across the bakery market. Too much solid content in a fat (or too high a melting point) can cause undesirable mouthfeel when the fat doesn't melt into the product. Too much liquid, and the product can look or taste oily. Unfortunately for coconut oil, it's simply not as flexible as a fat source like butter.

On the clean label front, brands that avoid a lot of allergens won't be able to use coconut oil, Warady explained. "Due to the fact that all of our products are free from 14 allergens, including all nuts, we are limited as to what we can use," he said. "We currently use sunflower and safflower oil, but we are always looking for alternative oils that meet the needs for the majority of our consumers."

Coconuts are classified as drupes, fruit with an outer fleshy part that surrounds a shell or pit with a seed inside. FDA includes coconut on its tree-nut allergen list because evidence suggests walnuts, hazelnuts and coconuts contain similar allergy-triggering proteins.

Finally, coconut oil is an expensive ingredient and has a distinct flavor of its own that can be difficult to disguise in more subtly flavored baked goods, added Bruce Barry, vice president of quality assurance at The Essential Baking Co.

The flavor issue is one that brands can circumvent with canola or soy oils, which remain the biggest contenders for bakery,



Coconut oil also can melt away during the baking process, since it has a low melting point, whereas butter, with a higher melting point, will stay suspended in the dough.

 Taryn Naranjo, dessert and pastry research and development chef, The Essential Baking Co.

thanks to their relatively colorless and flavorless attributes, Tompkins said (so long as a solid isn't needed). But what they offer in functionality, they lack in clean label credibility. Only 16 percent of consumers seek out processed foods with canola oil, reported Packaged Facts, and soybean oil is even less popular, with only 7 percent of consumers looking for such foods. For comparison, olive oil is sought after by more than a third of shoppers.

Thanks in part to the Mediterranean diet, olive oil has become incredibly popular, commonly used in home cooking as well as packaged goods. According to Packaged Facts, 75 percent of American adults surveyed consider olive oil the healthiest of all oils. Though not ideal for baked goods like pies, olive oil has made inroads with other baked goods, such as



Clean label is a trend that has been growing for years and is unlikely to do anything but gain steam as consumers become more aware of the alternatives that may provide a better health application.

— Bruce Barry, vice president of quality assurance, The Essential Baking Co.

crackers. Several mainstream cracker brands have launched varieties with olive oil not only on the ingredients panel, but also in the name. For example, three varieties of crackers marketed under the Triscuit brand carry olive oil in the flavor name (Cracked Pepper and Olive Oil; Dill, Sea Salt and Olive Oil; and Rosemary and Olive Oil), despite listing the ingredient near the end of the ingredients lists. Packaged Facts speculated since olive oil makes up such a small part of the recipe, it's unlikely that it adds much in the way of flavor or nutritional benefits, but it does lend a health halo that resonates with shoppers.

Like olive oil, liquid oils such as almond and safflower oil won't lend the functionality of a solid fat to most baked goods, Smith said. So, it's no surprise the fat of choice for most bakers is, predictably, butter.

Yes, butter is back. Having been displaced by PHOs in previous years, butter is now re-emerging in places where it was previously the primary fat, reported Packaged Facts. Its popularity is due to its superior flavor as well as the fact that it's a recognizable pantry ingredient. And, it's formulation-friendly.

"For baking purposes, butter is the easiest to use because of its pliability," said Naranjo, which is a trait lacking in oils like almond and coconut oil. "You can use very cold butter for some applications, or softened or melted butter for others." The only challenge it really faces, Packaged Facts noted, is that there's some price volatility and potential shelf-life concerns to consider. But that hasn't stopped national brands. Keebler Simply Made Cookies and Keebler Simply Made Cookie Thins, for example, both feature butter in an effort to attain shorter and simpler ingredients lists. Butter also aligns rather nicely with Millennial demand for less-processed foods and ingredients. And, unlike other options, it's inherently simple and readily understood.

## **Clean Label Opportunities**

Going forward, natural and unrefined oils will continue to resonate with Millennial shoppers, Packaged Facts maintained. Descriptions like "raw," "virgin," "extra virgin," "unrefined" and "cold pressed" will find favor, as opposed to "refined" or "solvent extracted," which imply heavy processing. Traditional fats, such as butter and lard, also will continue to be popular as clean label bakery ingredients. And, the market research firm anticipates that over the next few years, foods most successful with younger shoppers will be those containing minimally processed fats and oils, free of genetically modified organisms (GMOs) and maybe even organic—attributes important to these consumers.

"Clean label is a trend that has been growing for years and is unlikely to do anything but gain steam, as consumers become more aware of the alternatives that may provide a better health application," Barry said. In response, The Essential Baking Co. is shifting to using nothing but non-GMO ingredients. Today, a large percentage of its breads are not only non-GMO but also certified organic.

In the bakery aisle, gluten- and grain-free products will continue to drive sales, Smith predicted, as well as innovations using sprouted ingredients. "Overall, what's influencing the market is that consumers are reading labels and looking for ingredients they can visualize, pronounce and find in their pantry," she said. "People are also realizing the benefits of macronutrients and are willing to indulge in premium clean label baked goods. And, finally, people expect a level of ease and convenience to enjoy clean foods."



# Yes, butter is back.

Having been displaced by PHOs in previous years, butter is now re-emerging in places where it was previously the primary fat.







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he Paleo diet advocates consuming healthy saturated fats, grass-fed animal protein and vegetables, while abstaining from carbohydrates, sugar and dairy. For paleo devotees, the promise of this natural, food-as-fuel diet, combined with exercise, is more than just "primally" emulating ancient ancestors; it's about using diet and lifestyle to confront health issues, like obesity and cardiovascular disease (CVD), head on.

In 2012, 22-year-old Jordann Windschauer took a 30-day paleo challenge. "After the challenge, my physical fatigue, mental stress and sleepless nights disappeared, but I was still craving sweets," she said. "I couldn't find any delicious and true paleo baked goods, so I decided to start making my own."

She soon founded her own company, Base Culture, which today is headquartered in Clearwater, Florida. The company currently makes and markets 13 different SKUs spanning almond butter, sweet breads, sandwich bread, granola, energy bites and brownies through a distribution channel that includes Amazon, Walmart, Kroger, Whole Foods, Earth Fare, Food City, Central Market and Menards.

# Base Culture

Headquarters: Clearwater, Florida baseculture.com

Bringing a personal passion to life is never without challenges, as Windschauer soon discovered. She spent nine months searching for a qualified Safe Quality Food (SQF), gluten-free, non-GMO (genetically modified organism), koshercertified co-packer but couldn't find any that ticked all those boxes. Undeterred, she secured a loan to help purchase and renovate her own facility, where she could guarantee product quality and integrity for consumers, and control delivery times to retail partners.

"This loan also enabled me to purchase equipment and ingredients needed to start producing products in mass quantities for retail chains nationwide," she said.

As a result, all Base Culture's products are freshly baked in its own certified SQF Level 2 facility. "Our non-GMO, gluten-



The single-serve packaging format, combined with ultra-high-quality ingredients and a homemade taste, are a convenient, on-the-go option for all consumer segments, especially busy Millennials.

free, paleo and kosher certification illustrates our dedication to providing customers the tools needed to embrace an all natural, healthy lifestyle," Windschauer noted. "Base Culture is a winning combination of whole food ingredients ... protein, fiber, no artificial ingredients or preservatives, and made with minimal ingredients. There are no other brands in our space that can say those words."

## **Quality Ingredients, Optimal Products**

In keeping with the tenets of paleo, top-quality ingredients are at the center of every product Base Culture produces. Almond flour, coconut flour and golden flax serve as the foundational ingredients for the company's baked goods, which employ natural sweeteners like honey, dates and maple syrup in lieu of cane sugar. Likewise, the company makes great use of healthy fat ingredients, such as nuts and eggs, and other ingredients that follow the Paleo diet.

"We believe food should be consumed as nature intended, which is why our products are safe for those who have food sensitivities or intolerances, yet still crave wholesome and natural baked desserts or paleo snacks," Windschauer said, noting her company's goal is to use natural ingredients to create familiar products that people love without sacrificing taste. "Base Culture eliminates the threshold between healthy and unhealthy: free from preservatives, chemicals, additives, artificial salts, sweeteners, wheat or grain. Everything we produce is fuel for your body—primal food that doesn't require energy but provides energy."

Base Culture currently is embracing the demand for grab-and-go style paleo products. Windschauer said the single-serve packaging format, combined with ultra-high-quality ingredients and a homemade taste, are a convenient, on-the-go option for all consumer segments, especially busy Millennials.

Consumer needs—and feedback—are the basis for all Base Culture's new product research and development (R&D) initiatives. "Paleo foods continue to gain acceptance through all retail channels on a national level, resulting in more holes being identified in the marketplace," Windschauer commented. "Owning our own manufacturing plant gives us the flexibility to find solutions for our customers."

The company-owned manufacturing facility also gives Base Culture's R&D team the flexibility to be creative and develop new products for its customers, from initial concept through production and packaging. "We believe it is extremely important to remain innovative to stay on the front lines of food trends, and equally important, our customers' wishes," Windschauer said.

The approximate timeline between product ideation to actual production and delivery of that product to retail stores is roughly six months. "To get a product from ideation to the retail shelves during this time frame, we work through all the process steps of market research: collection of customer data and feedback, product development, sample testing, recipe refining, large batch testing, packaging design and printing, new item activation at distribution centers, and final production," she explained.





# **Connecting With Customers**

When customer input is a critical component of a business model, it's important to have engaging outreach. Base Culture utilizes social media, search engine optimization (SEO) and search engine marketing (SEM) as its primary approach to advertising and marketing.

"It is our goal to connect with our customers on a personal level and become a trusted source of information, so we have the privilege to provide them the tools they need to live a healthy lifestyle," Windschauer said. "Base Culture uses social media platforms to inform, educate and inspire customers to seek our products out on our website and Amazon, and in over 2,600 store locations that are currently selling our baked goods and snacks around the country."

Social media platforms afford the company to send targeted information and promotions to its customers in specific geographical locations to let them know where they can find Base Culture products in their local grocery store.

"Our online program allows us to test advertising and marketing programs, and receive almost instantaneous results, so we can optimize outcomes," Windschauer said. "Sales have grown over 600 percent over the past six months, and we expect to continue positive outcomes for years to come."

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Base Culture is a winning combination of whole food ingredients ... protein, fiber, no artificial ingredients or preservatives and made with minimal ingredients. There are no other brands in our space that can say those words."

- Jordann Windschauer, founder, Base Culture



# **Paying It Forward**

Millennials generally get a bad rap as being entitled, narcissistic and disinterested; however, Windschauer is doing her best to change those negative perceptions. She's a member of the Women's Business Enterprise National Council (WBENC), in which she has given numerous talks to organizations to inspire young women in business to follow their dreams.

"I have shown that Millennials CAN be a great force in the workplace and have done so through example, not just words," she said. "I have mentored numerous young women to help them along the path of developing their own talents in whatever field they aspire."

She's also structured Base Culture to have the type of climate in which employees know they're valued. "We recognize our corporate responsibilities to create employment opportunities at all levels of the workforce and support our

family of employees with benefits such as company-paid health insurance, and closing the facility for two weeks at Christmastime so that our employees can spend that special time with their families," she said. "We do this because we understand the incredible demands life places on families, and we're ready and willing to support our employees with the love and grace they deserve.

"We're a small company right now, and our reach is limited, but making 'going to work' every day something that is enjoyable and rewarding to all our employees is our priority, and one we've been very successful with."

Windschauer said ultimately Base Culture is a company that practices what it preaches. "Sometimes we take the long way to reach our goals, but we do it because it's the right way," she concluded. "Our company standards surpass those of the industry and measure to our own supreme levels of quality, integrity and excellence."



# Food For Thought

Obtaining certifications such as non-GMO, gluten-free, paleo and kosher illustrates a dedication to product integrity and transparency.

Owning a manufacturing facility provides the flexibility to be creative and develop new products from initial concept through production and packaging.

Using social media to test advertising and marketing programs allows companies to receive instantaneous results to optimize outcomes.





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2020 N. Central Ave. Ste 400, Phoenix, AZ 85004 Tel. 480-990-1101 • Fax 480-867-7943

Website: foodinsiderjournal.com

## **EDITORIAL**

Editor

Judie Bizzozero judie.bizzozero@informa.com

Content Marketing Manager

Karen Butler <u>karen.butler@informa.com</u>

Legal and Regulatory Editor

Josh Long josh.long@informa.com

Assistant Editor

Ginger Schlueter ginger.schlueter@informa.com

**Contributing Editors** 

Joanna Cosgrove Melissa Kvidahl Reilly

## **SALES**

Vice President, Sales, Health & Nutrition

Danica Cullins danica.cullins@informa.com

Senior Account Director

Ioana Neacsu ioana.neacsu@informa.com

Account Managers

Anthony Arteca anthony.arteca@informa.com
Todd Berger todd.berger@informa.com
Laurel Rivers laurel.rivers@informa.com
Todd Willis todd.willis@informa.com

Business Development Specialist, Asia

Jiani Lai jiani.lai@informa.com

### MARKETING SERVICES

Vice President, Marketing Services

Danielle Dunlap

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