



**Nutrition Facts**  
 Cookies (32g)  
 Servings: About 6

	% Daily Value*
Calories from Fat 50	
	9%
	7%
Total Fat 0g	0%
Saturated Fat 2g	6%
Total Sugar 8g	8%
Total Carbohydrate 24g	0%

**INGREDIENTS:** ENRICHED FLOUR, TRIPALMITIN, MONONITRATE (VITAMIN B1), MALTITOL (VITAMIN B2), FOLIC ACID, PARTIALLY HYDROGENATED SOYBEAN OIL, CANOLA AND COTTONSEED OILS, POLYDEXTROSE, GLYCERIN, EMULSIFIERS (VEGETABLE MONO- AND DIGLYCERIDES, DATEM, SOY LECITHIN), LEAVENING (BAKING SODA, AMMONIUM PHOSPHATE, CALCIUM PHOSPHATE), SALT, CORNSTARCH, ARTIFICIAL FLAVOR, SWEETENERS (SUCRALOSE, DEXTROSE), NATURAL AND ARTIFICIAL ASPARTAME, CELLULOSE GUM AND GEL, ARTIFICIAL COLOR, MODIFIED CORNSTARCH. \*EXCESS CONSUMPTION MAY HAVE A LAXATIVE EFFECT. \*\*PHENTYLETANOLAMINE CONTAINS PHENYLETANOLAMINE, A TRIVIAL AMOUNT OF SUGARS.

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 Cookies (32g) = 1 Carbohydrate + 1 Fat  
 3 cookies exchanges are based on the  
 Dietary Exchanges for Meal Planning. Copyright  
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## Working With Trans-Fat Alternatives

A rush to meet the anticipated demand for reduced- and trans-fat free shortenings and oils has resulted in a plethora of new ingredients flooding the baking industry. Learn how these ingredients influence the production and taste of bakery foods.

by **Paula Kurtzweil Walter**,  
 contributing editor

**W**hat the shortening and edible oils industry has given, it now taketh away.

Prompted by impending changes in food labeling and hoping to cash in on what is expected to be a lucrative market, manufacturers of shortenings and oils are busy churning out reduced- and trans-fat free alternatives.

Although many of these trans-fat alternative products were introduced only within the past year, they are already gaining attention and orders from manufacturers of bakery foods. One major company, Voortman Cookies, announced in November that it planned to eliminate the trans fat in its products by moving away from partially- and fully-hydrogenated oil.

However, switching to reduced- or trans-fat free shortenings and oils is not without its challenges. Some of the newly formulated products may introduce undesirable levels of other

compounds, such as saturated fat. Others are expensive to produce. And, many cannot replicate the functional properties of hydrogenated fats, so their substitution may require time-consuming reformulations.

The major advantage of using reduced- or no-trans fat shortenings and oils is that they reduce the trans-fat content of foods, allowing for a more consumer-acceptable label. As some nutrition and food experts see it, that in itself may be reason enough to switch to trans-fat alternatives.

"Chances are that if you put two labels in front of consumers, they're going to pick the one with the smaller quantity of trans fat," Barry Swanson, professor of food science and human nutrition at Washington State University, says.

### Taking out the trans fat

According to the Institute of

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Shortening and Edible Oils, reduced- and no-trans fat shortenings and oils can be created in the following ways:

- Blending fully hydrogenated (and thus trans-fat free) fats with unhydrogenated fats using interesterification. This process involves molecular rearrangement of unhydrogenated oils with high-saturated fat-based oils using more stable vegetable oils derived through traditional plant breeding or biotechnology.

- Using jelling or texture-building agents.

- Increasing the use of antioxidants to increase oil stability.

- Blending more stable vegetable oils with partially hydrogenated fats to lower trans fat while keeping saturated fats low.

Current and prospective trans-fat alternatives reflect these myriad methods. For example, one shortening and oil manufacturer's line includes naturally stable oils, tropical oils, blended-base stock oils and enzyme interesterification oils. Another manufacturer's product is derived from palm oil, which is a more saturated and thus a more stable oil than other vegetable oils.

Even the soybean industry, which has taken a public relations hit due to the common use of partially hydrogenated soybean oil, is developing a trans-fat alternative. Last summer, a leading biotechnology player announced plans to create a soybean oil that is virtually trans-fat free, even when hydrogenated. This new oil also is saturated-fat-free and high in monounsaturated fat. The oil is being developed through a multi-year soybean breeding project that involves genetic engineering and conventional breeding. The company undertaking the objective estimates that the project will take at least eight years before the seeds are ready for planting.

#### **The pros and cons**

In developing trans-fat alternatives, manufacturers have sought to capture the same functionality that shortening and other hard fats bring to foods. But in doing so, they've had to compromise.

For example, by using tropical oils as the basis for these products, they have had to revert to fats with a higher saturated fat content—a less heart-

healthy option and a potential turn off for consumers who want to reduce their saturated fat intake and who read food labels.

Trans fats alternatives made with "designer" fats, such as oleic oils specially bred to have fewer polyunsaturated fats and thus less need for hydrogenation, can be significantly more expensive than traditional fats.

And, despite manufacturers' best efforts, trans-fat alternatives can't always match the functionality of harder fats, and companies that want to use these fat substitutes may need to tweak their recipes to achieve the same quality.

However, manufacturers stand ready to help bakers deal with these issues. A survey commissioned by a leading supplier of trans-fat alternatives provides support for reduced- or trans-fat free shortenings and oils that have a higher saturated fat content. The survey found that the amount of saturated fat listed on the label was not as much of a concern to consumers as the presence of trans fat and the use of the term "hydrogenated."

Among the survey's 626 respon-

dents, half said they would prefer to buy a product with no trans fat, and about 56% said they would prefer to buy a product that was not made with hydrogenated fats, an ingredient that must be included in the ingredient list when a food is made with trans-fat free domestic oils. In addition, about two-thirds of respondents said that given a choice, they would take a non-trans fat food formulated from palm oil over a hydrogenated vegetable oil.

"Consumers have learned that the term hydrogenated is associated with trans fat," one supplier of shortenings and oils says. "It doesn't matter if the fat is fully hydrogenated or partially hydrogenated. They see hydrogenated and assume it's trans fat."

As some studies indicate, trans fat may be a stronger risk factor for heart disease than saturated fat. As a result, the reduced trans fat content of a food may offset the higher saturated fat value that is imparted when a product such as palm oil is used. "It's the lesser of two evils," the supplier says.

#### **Product and function**

When reformulating products to reduce or eliminate trans fats, bakers should be aware that one alternative will not provide consistent results to every bakery food. In fact, suppliers of reduced- or no-trans fat shortenings and oils have developed multiple product lines that address the issue of functionality in most baking categories that

rely on shortenings and oils.

One oil supplier's trans-fat alternative line includes a shortening for cakes and icing, as well as an all-purpose shortening that the company says is suitable for use in cookie doughs, muffin batters and pie crusts. Another supplier's line contains six products, one of which is considered suitable for cakes because it can provide the texture and mouthfeel of butter and is easy to aerate, the company says. Another is recommended for cookies and crackers, and another for icing and bakery mixes.

Similarly, another manufacturer says its products can benefit a number of food systems, including the baking, snacks, confections and margarine industries. By offering a multi-product line of low- and no-trans fat oils, the company says it can give food manufacturers "options that are tailor-made to suit their needs."

#### **Timeline**

With the deadline for labeling trans fat nearing (see sidebar below), many suppliers of trans-fat alternatives are offering research and development services for bakers looking to eliminate trans fats from their product lines. Although these suppliers say that their trans-fat alternatives can be incorporated into current formulations without major processing changes, they are offering technical assistance for those that may need help with reformula-

tions or with choosing the most appropriate product. Besides reformulation considerations, bakers also should prepare for possible cost increases when making the switch to reduced- or no-trans fat shortenings and oils. Depending on the product, costs generally are about the same as traditional oils and shortenings, or, as one manufacturer put it, "modestly more."

#### **Weighing the pros and cons**

The main question now is whether bakers and other food manufacturers will make the switch to trans-fat alternatives. Already, Voortman Cookies has announced the elimination of trans fat in its products, and fellow cookie baker, Kraft Foods and its Nabisco brand, has stated that it is researching ways to reduce the trans-fat content of Oreo cookies.

However, these bakeries and all bakeries with trans-fat levels in their products face some hard choices. Trans fat alternatives raise a unique set of issues, a combination of cost concerns, nutrition trade-offs and functionality. But at the same time, they address one of the biggest health concerns today: reducing the trans-fat content of bakery foods. As Barry Swanson of Washington State University says, trans fats have become "a red flag to consumers." Whether that alone is enough to warrant a switch remains to be seen. ●

## **Only two years until labeling changes**

Has it already been four years since the world was enthralled with millennium fever and gripped with fear over a potential Y2K Bug? For most people, these events seem like yesterday. If this is the case, January 1, 2006, will be here in no time.

This date marks the beginning of a new era in food labeling. From this date on, bakeries will have to label the trans-fat content of their bakery foods on the Nutrition Facts Panel.

According to the trans-fat rule, all food manufacturers must declare trans-fat content in the nutrition label on a separate line immediately under the line for the declaration of saturated-fatty acids. As with all subcomponents of total fat, the trans-fat declaration "is to be indented and separated by a hairline, with the amount expressed as grams per serving to the nearest 0.5 gram increment below 5 grams, and the nearest gram increment

above 5 grams," the FDA rule states. If a serving of food contains less than 0.5 grams of trans fat, the trans-fat content must be declared as zero, except if a baker makes the statement, "Not a significant source of trans fat," on a product label.

Food manufacturers must comply with the trans-fat rule by January 1, 2006, but FDA is encouraging food manufacturers to implement the changes before this date.