

## The lowdown on Whey Low

**By Rosalie Robles Crowe**

ARIZONA DAILY STAR

Attention dieters, carb- or calorie-counters and anyone who wants to cut down on sweets and eat more healthy foods:

You *can* bake your cake and eat it, too, with a little-known alternative sugar called Whey Low, says Lee R. Zehner, who developed the product.

The best part: Neither your taste buds nor your family or friends are likely to know the difference.

That's because Whey Low is made of natural sugars — sucrose, fructose and lactose — not artificial ingredients.

Zehner, who holds a doctorate in chemistry, developed Whey Low after his wife, Sue, was diagnosed with diabetes in 1999.

"She loves to cook and bake and hated her diabetes," he said, and that spurred him "to come up with something."

And that something was Whey Low in several forms: regular granular, Whey Low-D (granular for diabetics), Gold (brown sugar), Maple (to make a substitute syrup), Powder and Whey Low for ice cream.

Zehner, who has spent many years in nutrition and the food industry, theorized that if the three sugars could be formulated the right way, they wouldn't be fully absorbed by the body, thereby making the sugar more healthful. Not only that, it would eliminate the gastrointestinal problems that often accompany the use of sugar alcohols.

He's enthusiastic about Whey Low, especially because, he said, his wife has been able to control her diabetes by following her doctor's advice and by using Whey Low in her baking.

Marketed through Vivalac Inc., a private company in Brookeville, Md., Whey Low is becoming known mostly through word of mouth:

A daughter in Maine tells her mother in Tucson about the product.

The mother passes the information on to her friend, who, in turn, tells colleagues at work as well as cousins in Virginia.

And on it goes.

Vivalac is a small company staffed by the Zehner family: Zehner; Sue, his wife; their daughter, Erica Zehner Wheaton; and son, Adam Zehner.

Low-key marketing and a lot of Internet sales have been the norm because there haven't been a lot of extra dollars for large-scale

Sue Zehner's Rum Cake

*Whey Low inventor Lee Zehner looks forward to Christmas every year because of his wife's Rum Cake. It's a tradition he loves.*

**Yield: 12 servings**

- \* 1 1/2 cups Whey Low Granular sugar
- \* 1/2 cup chopped pecans
- \* 1 cup butter
- \* 1/2 cup canola oil
- \* 6 eggs
- \* 2 teaspoons almond extract
- \* 2 1/2 cups cake flour
- \* 2 teaspoons baking powder
- \* 1/2 cup light rum

Preheat oven to 325 degrees.

To prepare cake, grease a bundt or angel food pan. Sprinkle small amount of Whey Low Granular in pan. Sprinkle pecans over Whey Low Granular.

In a large bowl, beat butter, oil, and Whey Low Granular until creamy. Add eggs, one at a time, and almond extract, and beat until blended.

Blend in cake flour and baking powder alternately with rum. Beat until thoroughly blended. Pour batter into pan, and bake 50 minutes.

Cool cake in pan on top of wire rack for 10 minutes.

marketing promotions, what with all the expenses involved with getting a product like this to market.

"Lawyers and rats," Zehner said, explaining the finances of legal fees for filing patents in the United States and across the world and doing the requisite clinical testing.

Still, the word is getting around.

Retail stores, mostly in the East and Midwest, are beginning to stock Whey Low. A few commercial bakeries and other such companies also are using it in their products.

And now some restaurants in the East have switched to Whey Low.

In Bethesda, Md., Fred Pryzborowski is executive chef for Rock Creek Restaurant, an upscale eatery that opened in March 2005 with the goal of offering a nutritionally balanced menu.

The idea was to control ingredients and portion size, and, Pryzborowski said, he wanted meals that were low in fat and calories that tasted good. That was a must.

Knowing that desserts would be his biggest obstacle, he searched the Internet for ideas and found Zehner.

"Whey Low allowed me to not worry about the amount of sugar I used," he said. "I have found that it works well in the majority of my recipes."

Pryzborowski likes Whey Low because it doesn't have an after-taste like most sugar substitutes on the market.

Whey Low does have some limitations, however, Pryzborowski said.

"It tends to 'cake' a little and doesn't dissolve as well as sugar," he said, adding that it's not as sweet as sugar.

Zehner believes it is but acknowledges the "caking" problem. That's why his company markets a Whey Low especially for ice cream, he said. It's processed to make it more soluble.

Inventor explains how it works

Whey Low isn't an artificial sweetener — it *is* sugar, says Lee Zehner, Whey Low's inventor. But, he says, because of the way it is formulated, it is a low-calorie substitute for table sugar.

And because it's a natural food ingredient, it is a substance recognized as safe by the Food and Drug Administration.

Zehner explains how it works:

"The three main ingredients are sucrose, fructose and lactose — all common sugars," he said.

"There is an interaction among the three sugars that prevents the sucrose and lactose from being fully absorbed in the small intestine."

Basically, that's where nutrients are broken down and absorbed into the body, he said, adding, "If it doesn't happen there, it doesn't happen."

Instead, the sucrose and the lactose pass into the large intestine, which contains good and bad bacteria.

Apple Rhubarb Crumble

*We tested this Apple Rhubarb Crumble, using Whey Low instead of sugar, and we couldn't tell the difference. The recipe also works well with cranberries instead of rhubarb, and it can be made with regular table sugar and butter.*

**Yield: 10 servings**

\* 4 cups Granny Smith apples, diced

\* 2 cups diced rhubarb (the red part of the stalk)

\* 1/2 cup Whey Low Granular (or Whey Low-D)

\* 1 teaspoon cinnamon

\* 2 tablespoons water

**Topping:**

\* 1/3 cup flour

\* 1/2 cup Whey Low Gold (brown sugar)

\* 1 1/2 cups oats (not quick oats)

\* 1/2 cup chopped pecans

\* 1/2 teaspoon salt

\* 1/2 cup margarine (Smart Balance), melted

Combine the apples and rhubarb with the Whey Low, cinnamon and water and mix well.

Spoon into a 2-quart baking dish or individual ramikens that have been greased.

In the same bowl, mix together the flour, Whey Low Gold, oats, nuts and salt. Pour the melted margarine over all and stir to moisten.

Spoon the topping mixture evenly over the fruit and bake at 350 degrees for 45 minutes or until topping begins to toast.

Serve warm or cold, with (or without) whipped topping.

Nutritional values per serving:  
211.41 calories, 20.43 g

"Lactose is known to feed the good bacteria, forcing out the bad bacteria. Meanwhile, sucrose is simply consumed by all bacteria," Zehner said.

Currently, Dr. Thomas Castonguay of the University of Maryland is testing Whey Low as part of the Maryland Industrial Partnerships (MIPS).

MIPS is designed to help the state's small businesses.

Castonguay is a professor of nutrition in the UM nutrition and food science department. His area of research focuses on food intake, body weight and body composition — "the things you eat, why you eat them and what happens after you eat them," he said.

In the case of Whey Low, his attempt is to find evidence that supports Zehner's findings from testing done in Vivalac's laboratories. Zehner's testing (he holds a doctorate in chemistry) shows that Whey Low is 70 to 80 percent lower in calories than regular sugar, and Castonguay is looking for the hard evidence for that.

But, Castonguay said, the important aspect is not the calories in Whey Low but its metabolic composition.

"Yes, the energy (from sugar) is there," he said. But Zehner's testing shows that it never enters the body because of the absorption mechanism, Castonguay said.

The testing should be complete by the end of the year.

Assuming that Zehner's testing is proved accurate, Whey Low could be an important development.

Take a look at the sweeteners on the market now, he said.

Whey Low could give an opportunity to have a sweetener that is a real sugar, he said.

"We wouldn't have any of the concerns (that we have for) things that aren't sugars.

"It would help people meet their sensory needs . . . (allow) them to eat something that tastes good."

It also would help people — those who want to lose weight and those who are diabetic — meet their dietary needs, he said.

### **Equal parts**

Whey Low, a one-for-one sugar replacement, comes in different forms: Granular, Type-D Granular, Gold, Powder, for Ice Cream, and Maple.

- All except the Maple are available in 1-, 2-, 5-, 10- and 25-pound quantities.
- Prices begin at \$6.99.
- The granulars also are available in 3-gram packets (200 count) for \$12.99.
- A sampler with 1-pound packages of all Whey Low products — costs \$43.99.
- For more information, call 1-888 639-8480 or go online to [www.wheyLOW.com](http://www.wheyLOW.com).

Sue Zehner's Rum Cake

*Whey Low inventor Lee Zehner looks forward to Christmas every year because of his wife's Rum Cake. It's a tradition he loves.*

### **Yield: 12 servings**

\* 1 1/2 cups Whey Low Granular sugar

carbohydrates, 12.19 g fat.

Rum Sauce for Rum Cake

\* 1/2 cup butter

\* 1/8 cup water

\* 1 cup Whey Low Granular sugar

\* 1/4 cup light rum

Combine all ingredients. Heat to boiling and boil for 1 minute.

Pierce cake with skewer many times. Pour rum sauce on cake. Cool to room temperature in pan. Invert cake to remove from pan and place on serving plate.

Each serving of rum cake has a caloric value of 482 calories, a 20 percent reduction from the same cake made with table sugar.

- \* 1/2 cup chopped pecans
- \* 1 cup butter
- \* 1/2 cup canola oil
- \* 6 eggs
- \* 2 teaspoons almond extract
- \* 2 1/2 cups cake flour
- \* 2 teaspoons baking powder
- \* 1/2 cup light rum

Preheat oven to 325 degrees.

To prepare cake, grease a bundt or angel food pan. Sprinkle small amount of Whey Low Granular in pan. Sprinkle pecans over Whey Low Granular.

In a large bowl, beat butter, oil, and Whey Low Granular until creamy. Add eggs, one at a time, and almond extract, and beat until blended.

Blend in cake flour and baking powder alternately with rum. Beat until thoroughly blended. Pour batter into pan, and bake 50 minutes.

Cool cake in pan on top of wire rack for 10 minutes.

#### Apple Rhubarb Crumble

*We tested this Apple Rhubarb Crumble, using Whey Low instead of sugar, and we couldn't tell the difference. The recipe also works well with cranberries instead of rhubarb, and it can be made with regular table sugar and butter.*

#### **Yield: 10 servings**

- \* 4 cups Granny Smith apples, diced
- \* 2 cups diced rhubarb (the red part of the stalk)
- \* 1/2 cup Whey Low Granular (or Whey Low-D)
- \* 1 teaspoon cinnamon
- \* 2 tablespoons water

#### **Topping:**

- \* 1/3 cup flour
- \* 1/2 cup Whey Low Gold (brown sugar)
- \* 1 1/2 cups oats (not quick oats)
- \* 1/2 cup chopped pecans
- \* 1/2 teaspoon salt
- \* 1/2 cup margarine (Smart Balance), melted

Combine the apples and rhubarb with the Whey Low, cinnamon and water and mix well.

Spoon into a 2-quart baking dish or individual ramikens that have been greased.

In the same bowl, mix together the flour, Whey Low Gold, oats, nuts and salt. Pour the melted margarine over all and stir to moisten.

Spoon the topping mixture evenly over the fruit and bake at 350 degrees for 45 minutes or until topping begins to toast.

Serve warm or cold, with (or without) whipped topping.

Nutritional values per serving: 211.41 calories, 20.43 g carbohydrates, 12.19 g fat.

Rum Sauce for Rum Cake

\* 1/2 cup butter

\* 1/8 cup water

\* 1 cup Whey Low Granular sugar

\* 1/4 cup light rum

Combine all ingredients. Heat to boiling and boil for 1 minute.

Pierce cake with skewer many times. Pour rum sauce on cake. Cool to room temperature in pan. Invert cake to remove from pan and place on serving plate.

Each serving of rum cake has a caloric value of 482 calories, a 20 percent reduction from the same cake made with table sugar.

• *Contact reporter Rosalie Crowe at 573-4105 or [rcrowe@azstarnet.com](mailto:rcrowe@azstarnet.com). — Rosalie Robles Crowe*

All content copyright © 1999-2006 AzStarNet, Arizona Daily Star and its wire services and suppliers and may not be republished without permission. All rights reserved. Any copying, redistribution, or retransmission of any of the contents of this service without the expressed written consent of Arizona Daily Star or AzStarNet is prohibited.