

Sizing up soy selections

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by Jeff Gelski

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Food manufacturers using soy as an ingredient may want to be more selective in their applications.

While sales in soy food categories still increase annually, they do so at a more modest rate, according to recent reports. Product or category choice may have more of an effect on profits than in recent years. Still, opportunities are out there.

New soy flours make bread a potential growth category. Ongoing research on soy isoflavones could also benefit the entire soy foods category, and an emphasis on nutrition could lead to more soy in school food service programs.

In 1999, the Food and Drug Administration approved this health claim: "25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of coronary heart disease." Food manufacturers since then have sought ways to incorporate 6.25 grams, or one-fourth of 25 grams, of soy into a serving.

The F.D.A. has yet to rule on a health claim petition submitted by The Solae Co., St. Louis. The petition, which includes a review of 58 studies, seeks a claim that suggests the consumption of soy protein-based foods may reduce the risk of certain types of cancer, including breast, prostate and colon cancer. F.D.A. approval could boost soy foods sales, just as the 1999 health claim did.

Choosing the right category

"Soyfoods: The U.S. Market 2004," a 183-page market study by Soyatech, Bar Harbor, Maine, and SPINS, San Francisco, estimated total sales in soy foods categories to grow 5.3% in 2004, compared with 12.8% in 2002 and 7.2% in 2003.

The report, however, also found a number of soy categories growing at triple-digit rates. According to a December 2004 report from ACNielsen, soy cereal grew to a \$113 million market from a \$10 million market five years ago.

"Recent dramatic changes in the cereal business, such as decreasing sugar levels and increased whole grains in popular brands, suggest further opportunities for soy in this area," according to the ACNielsen report.

A study by Mintel, Chicago, substantiated these findings. It showed sales of soy food and drink products increasing 6% between 2003 and 2004, a drop from the 17% growth between 2001 and 2002. According to the report, soy has moved beyond meat alternatives and soy milk to other items such as frozen desserts, salad dressings and snacks. New food delivery systems for soy will increase the possibility of consumers adding soy to their diets, Mintel said.

Mintel forecasts the soy market will move into a more stable, mature phase with specific segments showing better growth. It's up to food manufacturers to select the segments that are ripe for growth.

New flours available

New soy flours may increase the potential of sales growth for bread with soy.

Kerry Americas, Beloit, Wisc., has introduced a type of whole-bean soy flour from Nutriant. It may be used to replace 15% to 20% of wheat flour in bread while remaining undetectable, said Peter Murray, technical services manager for Nutriant.

Cerestar Food and Pharma Specialties Europe, Mechelen, Belgium, has introduced its own whole-bean soy flour. C*Protail includes soy grits and the toasted and enzyme active soy flour.

"In bakery products, healthy foods and many other food applications, soy flour offers proven advantages over animal proteins, including lower cost, increased functionality and greater shelf life," said Mark Wastijn, marketing director of Cerestar Food and Pharma Specialties Europe. "In bakery, soy flour contributes to improved cell structure and crumb, improves water absorption and retention, and functions as a crumb whitener, egg replacer and dough conditioner."

Natural Products, Inc., Grinnell, Iowa, has offered whole-bean soy flour for years, said Jon Stratford, sales and marketing manager. More recently, the company produced low-fat whole-bean soy flour, which is missing about 65% of the fat.

Whole-bean soy flour gives food manufacturers a shot at a cleaner label, Mr. Stratford said. Leaving all the fat in the flour, or at least some of it, improves the taste, he added. Thus, food manufacturers may not need to mask any off flavors.

"It's kind of novel to use whole soy," Mr. Stratford said. "It's a good-tasting ingredient and an economical source of protein."

Nutriant's new soy flour delivers more of a nutty taste, or almost "peanuty-type" notes, Mr. Murray said.

"The whole grain really delivers a nicer, roasted flavor, which is very uncommon in the soy flour industry," he said.

Food manufacturers may find it difficult to reach 6.25 grams of soy per serving in bread while keeping adequate taste and texture.

Researchers at The Ohio State University already have reached 6.25 grams per serving. The formulation, including the amount of soy flour used, is proprietary and patent-pending, said Yael Vodovotz, Ph.D., assistant professor, department of food science and technology at O.S.U., Columbus.

Last year, Dr. Vodovotz and Cory Ballard, then an undergraduate student at O.S.U., formed a new company to market the soy bread. Bavoy, Inc., based in Columbus, named the bread Healthyhearth. It has been offered in original soy, soy multigrain and soy cinnamon raisin flavors.

A marketing study in 12 Kroger stores in Ohio was completed in January, Dr. Vodovotz said.

"The marketing study went very well," she said. "Right now we're looking for investors to go to the next step."

Isoflavone research

Researchers at Ohio State's Department of Human Nutrition have studied the soy isoflavones in the Healthyhearth bread.

But they are not the only ones to study soy isoflavones recently. A study at the Baylor College of Medicine, Houston, is investigating the effect of isoflavones in reducing hypertension in menopausal women. In another study, the college is looking at the effect soy isoflavones have on osteoporosis in menopausal women.

People in general should consume 50 mg of soy isoflavones daily, but most Americans fail to reach that number because their diets are deficient in soy, noted Mark Matlock, senior vice-president of food research for Archer Daniels Midland Co., Decatur, Ill.

In baked foods, soy isoflavones are GRAS (Generally Recognized As Safe) in nutrition bars, said Stan Andrews, manager, bakery ingredient applications, for ADM. Formulations could include up to 50 mg of soy isoflavones in one nutrition bar, Mr. Andrews said.

Soy in schools

Soy's place in school lunch programs looks promising, too. Groups across America want to boost the nutritional value of students' meals.

Last fall in New Jersey, a bill approved by an assembly committee stated that no food of minimal nutritional value, as defined by the F.D.A., shall be sold to pupils on school property until at least one half hour after school ends.

In Illinois, ADM, the Illinois Soybean Checkoff Board and the Illinois Center for Soy Foods at the University of Illinois, Urbana-Champaign, Ill., launched a pilot program in June 2004 to include more soy in school lunch programs.

Finally, a school board in Seattle approved a set of nutrition-related policies before the 2004-05 school year. Besides meat alternatives, soy may work in bread and pasta products at school, Nutriant's Mr. Murray said. He cited macaroni and cheese as an example.

While cereals, flours and pasta made from soy may fit in school lunch programs, soy milk might be a nutritious addition to school vending machines, said John Wood, business development manager for food service at ADM. The company recently hired a national broker market network for school food service, he added.

Judging by a nationwide survey completed by Aramark Corp. in 2004, more college students might be interested in soy foods. Nearly a quarter of the more than 100,000 students surveyed said having vegan meals on campus was important to them. Vegan meals contain no meat, fish, poultry or other products derived from animals.

Aramark added dozens of vegan menu items as part of its Just4U menu program, which was made available to about two dozen Aramark-managed college campuses this school year.

Soy may fit into both vegan and organic diets, Mr. Murray said. Pasta and bread with soy are two possible options.

Soy product sales by quarter

U.S. retail sales of products featuring package claims that the product is made from soy, not including the ingredient list. Sales are for food, drug and mass merchandise stores, not including Wal-Mart Stores, Inc.

2003 2004

(\$ millions) (\$ millions)

1Q 432.0 453.7

2Q 434.8 458.8

3Q 438.3 457.7

4Q 414.1 433.5

Source: ACNielsen