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Functional Dairy Products

Beyond calcium, dairy products offer a treasure trove of nutritional benefits.

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Online Editor



Years ago, America's Dairy Farmers championed the bone- and muscle-building benefits associated with regular milk consumption by advertising "Milk. It Does a Body Good." Fast forward a couple of decades and researchers have confirmed that dairy's inherent health properties are more than just "good" for the body. Indeed, dairy has evolved from its standard food/beverage status to being a delivery system for health-inducing nutrients that appear to hold the key to a variety of conditions plaguing the American population, including digestive complaints, immunity, bone health issues and weight management.

Calcium, potassium, phosphorus, vitamin D and protein are all beneficial components of dairy products. And while milk, cheese, yogurt and ice cream have been around for ages, manufacturers are finding ways to add even more nutrients to these products by fortifying with substances such as prebiotics, additional vitamin D and calcium and omega 3 fatty acids.

The benefits associated with omega 3 consumption are widely known. Banking on this growing awareness, Cabot Cheese recently introduced a 50% reduced-fat Cheddar cheese with Omega-3 DHA, which supplies 20% of the 160 mg daily value of DHA.

Dairy's Role in Health

According to AC Nielsen, probiotic food and beverage product claims increased more than 140% from 2006 to 2007, with yogurt continuing to be the most popular delivery vehicle. Probiotic-fortified kefir beverages have also become more popular in the last year, as have probiotic-enhanced cheeses.

One recent example is dairy-derived Vivinal GOS (galacto oligosaccharides) from Friesland Foods Domo USA, Inc., which is headquartered in Chicago, IL. Vivinal GOS, a prebiotic that essentially serves as food for the good bacteria in the gut, is said to impart digestive health, immunity and calcium absorption benefits. It is supported by scientific research and used globally in many different products including infant formula, dairy foods and beverages.

"Fiber is big and pro- and prebiotic ingredient usage is increasing. The dairy 'halo' of good health is being translated into good-for-you claims. We are also seeing dairy products positioned as healthy indulgence—eating options you can enjoy while still enhancing your overall well-being," said Sarah Staley, vice president business development for Friesland Foods Domo USA, Inc. "There has [also] been a movement from content to functional claims (e.g., moving from 'source of calcium' claims to source of calcium for healthy bones claims)."

Eric Bastian, the Twin Falls, ID-based vice president of research and development for Glanbia Nutritionals, commented that some of the most important focus areas for his company have been heart health and weight management. "Regarding heart health, it's particularly related to things like blood pressure where calcium has been shown to be quite effective. It could also potentially have a preventive effect," he said. "In addition to calcium, a lot of people have also done work on ACE-inhibitory (angiotensin-converting enzyme) peptides, trying to prevent angiotensin II from forming, which is a very strong vasoconstrictive substance that can form in the body. Many of the food proteins in dairy can deliver peptides that are inhibitory to this enzyme system."

Speaking of blood pressure, DSM's blood pressure management ingredient, tensVida (formerly known as TensGuard), is a milk-derived tripeptide that helps to maintain healthy blood pressure within the normal range. DSM uses advanced enzymatic hydrolysis to release the maximum effectiveness tripeptides, which are naturally found in dairy products such as aged cheese and cultured milk.

The role of dairy in weight management is a hot topic. It's not so much milk consumption that's important, rather, it's the individual proteins particularly as they relate to suppressing ghrelin, a hunger signal hormone. "People who are overweight and heading into obese territory have a couple of metabolic things that are changing for them," explained Mr. Bastian. "Many have high levels of cortisol and one of the side effects of high cortisol levels is increased ghrelin levels. With that system going, people who are already overweight tend to want to eat more because they feel hungry all the time. There's some evidence to suggest that whey proteins may have a role in suppressing ghrelin."

Athletes and body builders have capitalized on the benefits of protein for years, and it seems mainstream consumers are finally following suit. According to a study conducted by The NPD Group, Inc., 53% of Americans are trying to get more protein in their diet, versus a year ago. Last year, Tula Foods introduced a new line of yogurts, "Better Whey of Life," promoting whey protein as an ingredient. Last year Starbucks introduced a line of smoothies, "Vivanno Nourishing Blends," fortified with up to 21 grams of whey protein in a single serving.

"Protein intake plays a role in satiety, or feeling of fullness," said Matt Pikosky, director, research transfer, Dairy Management Inc., Rosemont, IL. "Research shows that protein is more filling than carbohydrates or fats and that higher protein diets lead to satiety. Consuming more foods with added whey protein is a simple way for consumers to increase their intake of protein and help achieve a higher protein diet and satiety benefits."

Clinically-proven Prolibra from Glanbia is a whey-based weight management solution said to help reduce fat without compromising lean

body mass. According to the company, participants in a 12-week clinical trial who consumed about 24 grams of Prolibra twice daily lost 82% more fat than the control group, which took a placebo. And they retained twice the lean body mass. This is significant because achieving a healthier fat to lean body mass ratio reduces the "yo-yo" effect associated with many weight management products.

Gauging the Future

Despite the recent economic downturn, the profile of an average functional dairy product consumer hasn't changed drastically. Health-conscious Baby Boomers, educated middle-aged women and athletes are still top consumers, but nowadays the marketing of the products is less about the consumer and more about the specific condition the product is formulated to address.

DMI pointed to a 2008 Mintel report ("Yogurt and Yogurt Drinks—US," November 2008), which stated that between 2005 and 2008, the combined sales of yogurt and yogurt drink brands targeting specific medical needs—immunity boost, lower cholesterol or blood pressure, digestive health—grew 169% and accounted for 11% of the total market share, up 10% since 2005.

Innovation has played a large role in the functional foods category, according to Mintel, which reports that most of the functional food market's innovation occurs in the dairy segment, representing nearly three-quarters of total functional food sales. ("Functional Foods—US," May 2008). The same report also shows shoppers' willingness to pay more for functional dairy products like Dannon Activia or other enhanced dairy products.

"Baby Boomers with higher levels of expendable income are certainly interested in functional health related foods and supplements but it's not confined to them," said Glanbia's Mr. Bastian. "Athletes and younger consumers are looking for specific health benefits, not so much for things like blood pressure, but absolutely about weight. Some people are not going to pay the premium given the current economic climate but our markets are still fairly strong."

"People are turning to food options for prevention of health problems as health costs rise. When the economy is struggling, people like to have some affordable indulgence as well as take control in small ways of their potential health related costs and quality of their family life," noted Friesland Foods Domo's Ms. Stanley. "Dairy benefits are understandable to the average consumer and the products available are affordable even with value-added benefits."

To help grow the functional dairy category Ms. Stanley said education is imperative. In particular, she said there would be a strong focus on health benefit communication over the next few years. "Dairy is both an important source of beneficial components as well as being a well accepted vehicle for delivery of those benefits," she commented. "We expect this sector to continue to evolve and grow as knowledge of components and their benefits along with availability of functional ingredients increases."

"If you think you know dairy, think again," surmised Alan Reed, senior vice president, U.S. manufacturing and ingredient marketing, DMI. "As the latest research results become available, dairy product manufacturers are finding more ways to create innovative, nutrient-packed products that give them a competitive advantage."

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