

Improved performance

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by Editorial Staff

When Gatorade was introduced commercially in 1968 it had just one flavor — lemon-lime. The original sports beverage contained sugar and sodium, and was said to help replenish an athlete more effectively than water. Sports and sports nutrition has come a long way since.

Today's professional and amateur athletes have access to training equipment as well as sports-specialized medical care and nutrition that athletes could only have dreamed of when Stokely-VanCamp first rolled out the greenish drink from the University of Florida.

Sports nutrition is a strong category with a dedicated core consumer, but it's also a category that provides significant cross-over opportunity for successful brands. While there were once just a handful of players in the segment, most of them entrepreneurs with a unique flagship product, major food manufacturers are now competing in and redefining the category while providing more push toward the mass market. With some modifications, what has worked for athletes also provides benefits to the weekend warrior, or even the aging consumer monitoring his or her waistline.

This leads to some interesting challenges for product development professionals, whether they are working with a small start-up or a multi-national with a portfolio of household-name brands. It also has a particular importance to the dairy industry, as dairy-based proteins are typically a keystone ingredient in sports drinks, nutrition bars, protein waters, and the like.

Steve Rittmanic is an independent R.&D. consultant who has worked with Next Proteins Inc. of Carlsbad, Calif., for nearly five years to develop protein-based nutrition products. Among them is a line of ready-to-drink (R.-T.-D.) protein beverages under the company's well established Designer Whey brand.

Mr. Rittmanic said hardcore athletes are more forgiving when it comes to flavor and clean label issues, and are usually looking for the biggest load of nutrients per-serving size. The rules of the game change when designing similar products for a broader audience.

"One of the recent challenges for Next Proteins has been how to morph Designer Whey Protein Water into the mass markets and capitalize on the current emphasis on weight management," Mr. Rittmanic said. "When you go to mass market it has to taste good. It absolutely has to taste good."

Designer Whey Protein Water is made with natural colors and flavors and is sweetened with sucralose. Whey protein isolate delivers 12 grams of protein per 16 oz. The beverages also provide 5 grams prebiotic fiber (isomalto-oligosaccharides), and sugar is limited to 1 gram per serving.

The case for whey

Designer Whey Protein Water competes in a broader segment that includes Gatorade, milk-protein-based products like Muscle Milk, from Benicia, Calif.-based Cytosport, and other protein waters and fruit-based protein beverages such as The Kellogg Co.'s Special K20 Protein Water and the newly-introduced BeneVia Beverages from HealthSpan Solutions, Little Rock, Ark.

Many of the products use whey or whey and casein blends to deliver protein.

No coincidence, according to Dairy Management Inc. (D.M.I.)

"Whey protein has long been a staple in the body builder's tool kit for optimum nutrition and muscle building benefits," said Matthew Pikosky, director of research transfer for D.M.I. "But about 10 years ago, as additional research emerged on the numerous benefits of dairy for all, the food and beverage industry took notice of dairy's potential to hit the mainstream market. Whey protein started showing

up in products at the grocery and convenience store, with manufacturers targeting mainstream consumers interested in health and wellness."

As a result, whey proteins may be found in everything from oatmeal to a coffee-house latte. The reasons whey has become first choice (egg whites are a close contender for certain applications) are many. They include a fresh, natural taste, a range of types with different functionalities, and various protein concentration levels. Other advantages for formulators include whey's solubility and binding properties, and the slightly sweet flavor delivered by higher concentrated whey proteins.

The beauty of formulating with dairy-based protein ingredients is that one may choose which to use based on the pH conditions and the beverage's heat stability requirements, said Kimberlee (K.J.) Burrington, dairy ingredient applications coordinator, Wisconsin Center for Dairy Research at the University of Wisconsin-Madison.

"If you are using protein in a shelf stable, shake-like product that typically has a neutral pH, then you would choose a milk protein concentrate or isolate," Ms. Burrington said. "If you are adding protein to a high acid sports drink like a Gatorade, which is typically at pH3, then you should choose a whey protein isolate for heat stability and clarity."

Specialized R.&D.

The makers of BeneVia claim to have taken whey protein a step further by developing a blend that provides the optimum mix of amino acids for maximum utilization and benefit, particularly for aging adults in the big baby boomer demographic.

"There is not a company out there, large or small, that is not interested in marketing for healthy aging," said John Troup, chief executive officer of HealthSpan. "We've spent a lot of time on market research, on clinical trials and on talking to consumers, in order to develop a product that truly addresses the needs of baby boomers."

The adult medical nutrition category is estimated to represent over \$2 billion annually, according to the company, and it is expected to double in the next five years.

The BeneVia line is made up of four products, each of which offers a different function for a particular health concern: strength and energy, memory and focus, heart health and immune protection. Initially there is a different fruit flavor matched to each formula. Plans call for an additional flavor for each.

BeneVia was developed through a partnership that includes Robert Wolf, a professor of geriatrics and director of the Center for Translational Research in Aging & Longevity at the University of Arkansas for Medical Science's Reynold's Institute. But Mr. Troup said there is an important part of R.&D. that has nothing to do with clinical environments.

"I always encourage our R.&D. staff to go out and do store checks," he said. "It's important to connect the obvious dots to ensure that you are meeting the consumer's needs. If the consumer has an unmet emotional need and you can meet that need, you will be successful."

Mr. Rittmanic has worked with Next Proteins to develop a whey protein-based carbonated soft drink for which Next Proteins holds several patents. The product has been fully developed and is ready to take to market when the opportunity is right, he said.

Next Proteins also recently partnered with the television program "The Biggest Loser" for a co-branded protein beverage mix.

The Kellogg Co., Battle Creek, Mich., one of the 10 largest food companies in the United States, leveraged some of its R.&D. resources toward developing protein beverages. Special K20 Protein Water, and Special K Protein Shakes cover both the clear-fruit beverage and the milk-based approaches.

Special K20 contains 5 grams of protein and 5 grams of fiber per bottle, and uses whey protein isolate. The protein shakes contain 10 grams of protein and 5 grams of fiber, they employ a blend of whey protein concentrate and soy protein. Special K Protein Shakes have

a head-to-head competitor in Muscle Milk R.-T.-D. products.

An extension of a line of protein powders marketed to body builders, Muscle Milk R.-T.-D. is said to promote exercise recovery, lean muscle growth, and healthy, sustained energy. The base product comes in three flavors and delivers a substantial 25 grams of protein per 14-oz serving. Earlier this year, the brand owner Cytosport introduced a light version.

As for Gatorade, just this year it underwent a major rebranding that produced eight formula/flavors each with a unique combination of vitamins and nutrients for specific functions. Gatorade is owned by the Quaker Oats Division of PepsiCo, Inc., Purchase, N.Y. The brand has been used in conjunction with myriad products, including protein bars, chewing gum and enhanced water.

The R.-T.-D. product, now known as Gatorade G, is based on the original formula, and it still comes in the green Lemon-Lime flavor.