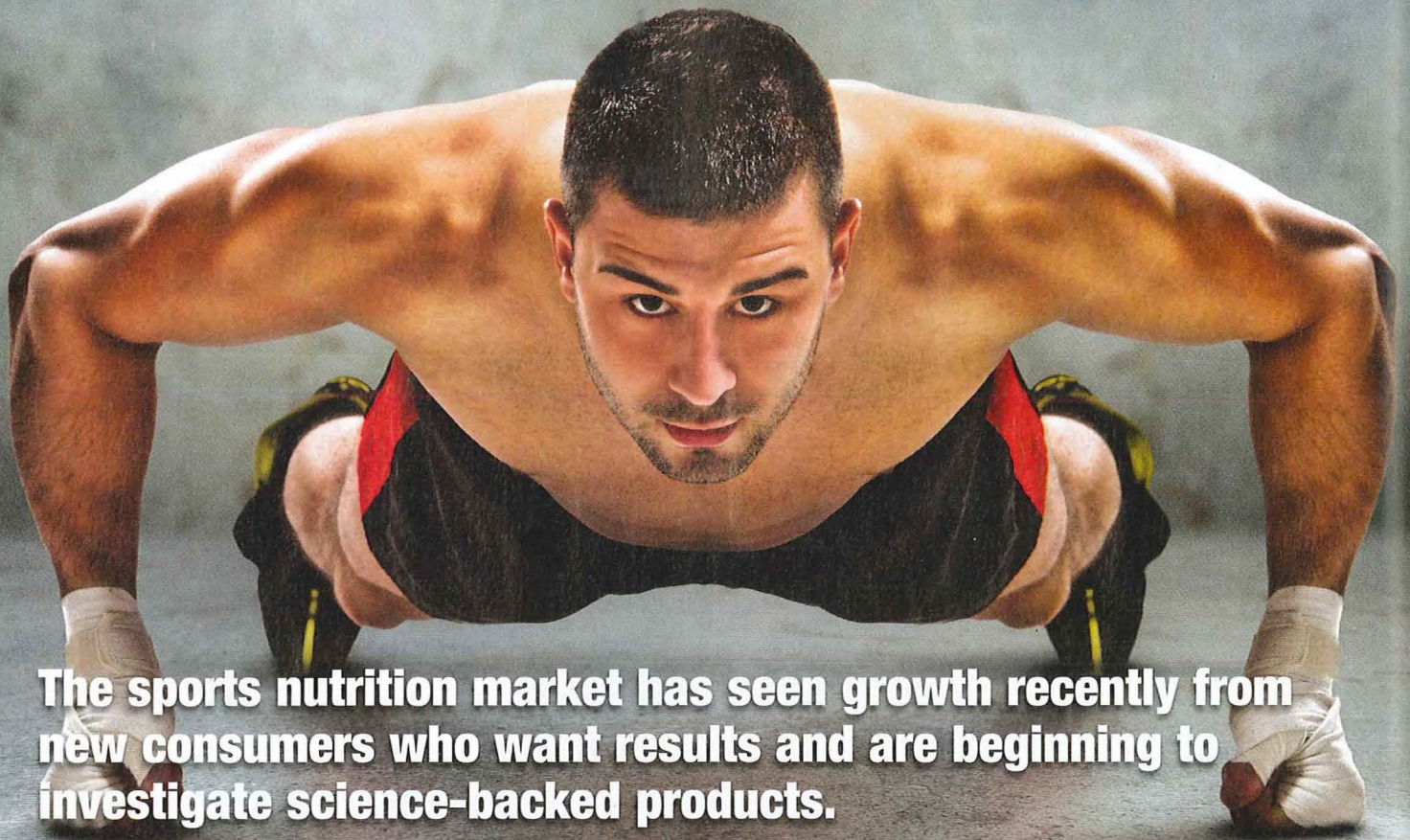


GETTING IN THE GAME



The sports nutrition market has seen growth recently from new consumers who want results and are beginning to investigate science-backed products.

By Janet Poveromo

While riding out tough economic times, the sports nutrition category is moving from bench warmer to starter status, as the market has experienced solid growth over the past year. "According to industry experts, I have heard as much as 10 to 12 percent growth over 2012," said Shawn Baier, COO of Iowa-based Metabolic Technologies Inc.

"Although the recession did have an impact, there have been several fringe or niche markets within sports nutrition that have seen incredible increases," Baier added. For example, the crossfit training and lifestyle movement has taken off, and in this group, there is a focus on nutrition as well. This interest in nutrition has introduced an entirely new group of people to the sports nutrition category."

Tim Hammond, vice president of sales and marketing for Washington-based Bergstrom Nutrition, producer of the proprietary MSM ingredient, OptiMSM, said the company is also observing movement in the category. "The growth I am seeing is in mainstream products formulated to support healthy and active lifestyles, which in turn resonates with a larger demographic," he explained. "The weekend warrior has far more choices than just purchasing a product created for serious training. In addition, products addressing specific conditions, such as joint support and preventative care, are being introduced to the category as product extensions."

And these consumers are seeking out products and brands with a clean image; products that are free of banned substances, have third-party certifica-

tions and include ingredients that are backed by a safe record, said Chase Hagerman, business development and marketing manager with Minnesota-based Chemi Nutra, supplier of the clinically validated Mediator Phosphatidic Acid (PA) ingredient. "Some notable brands for touting these qualities that have been introduced in the last year or so include Iovate's EPIQ Nutrition, GNC's co-branded/co-formulated Marked, Twinlab's Clean Series and Douglas Lab's Klean Athlete."

The predominant driver of these products is high school, collegiate and professional athletics programs that test for performance-enhancing compounds, according to Hagerman. "However, these athletes represent just a sliver of the sports nutrition market. Without a doubt, average Joes, athletes or individuals who do not perform on a com-

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petitive level, are the primary consumers of supplements."

Product Status

David Janow, CEO of California-based Axiom Foods, and an authority on plant-based fractions, especially rice, said protein products (bars, powders, RTDs, etc.) account for more than 90 percent of all sales in the sports nutrition market. "We look at the facts: Euromonitor International reports expected annual growth of sports nutrition market to be 7 percent, while Packaged Facts reports 6 percent growth in beverages and 14 percent growth in bars."

Janow, the creator of Oryzatein, a chemical-free, whole grain brown rice protein, noted that protein in particular has come to the forefront and the industry can expect this to continue. "While our bodies need to replenish our supply each day, there is also research to prove it is needed for pre- and post workouts to help build muscle and lose weight. I think there is a huge fringe as bodybuilders are always looking for something to give them an edge, such as rotating proteins. Also, as the percentage of people with lactose intolerance increases from 50 percent to 70 percent of people in the U.S., a significantly larger percentage is looking for vegetarian resources."

While beverages and bars are increasing, the protein powder market accounts for about 70 percent of sales in sports nutrition products. "Innovation in protein products is a must as why is getting 'old,' Janow stressed. "RTDs and nutrition bars accounted for 10 percent of sales, according to Euromonitor International Data from 2012."

Hagerman pointed out that the last few reports he has seen for mega-brand sports drinks show a slow decline. "I'm not certain if the lag is due to the fact that there are more slices to the pie or if consumers are purchasing less. But one thing is for sure, consumers are demanding products with fewer calories

and a broader benefit to their training," he said, noting that drink products that include coconut water, milk and soluble protein seem to be doing well, and that energy drink companies are also getting into the sports market with a focus on hydration.

"Any products that conflate the task of meeting nutritional requirement while presenting itself in a quality manner is seeing growth," said Tom VonderBrink, president of Bioenergy Life Science in Minnesota, producer of Bioenergy Ribose. "Products that decrease the amount of conscious attention needed while achieving the same results will continue to trend in popularity—bars, gels, recovery drinks and meal replacements are all designed to expedite the nutritional process and will continue to grow in market shares."



Products featuring Bioenergy Ribose

Wants Versus Needs

While the highest-quality nutritional products are the goal of well-regarded manufacturers, it should come as no surprise that there are consumers seeking a quick fix, with many producers eager to fulfill that wish. "Driving sport and health-minded consumers away from convenience toward fresh, plant-based foods and supplemental regimens should be of paramount concern. Yet it isn't," said VonderBrink. "Nutrient accessibility is inversely proportional to nutrient quality; that is, faster and easier is rarely qualitatively better."

For example, VonderBrink noted that pre-workout supplementation is dominated by stimulant-based vasodilators. "The pre-workout with the most punch wins the day. Post-workout within inner circles of bodybuilding and high-level athletics has become about hormonal manipulation—more specifically, insulin, glucagon, lipolipase, leptin and pathways specific to protein synthesis like mTOR. This time-dependent methodology is geared toward introducing nutrients into the system in a time-specific manner to leverage a response from the endocrine system."



Mediator[®] Phosphatidic Acid

Chemi Nutra's Hagerman said that pre-, during and post-workout products are a staple of any supplement brand, while also addressing the focus on speed. "The success of these categories is due to the way they work: acutely, meaning consumers will feel them working shortly after consuming them. They will be pumped up to hit the gym, energized to keep their stamina and they will recover nicely after their workouts. It's true in most facets of consumerism: we like results now. Other sports nutrition products like testosterone boosters and fat burners take time before the benefit is perceived."

However, with so much information available, the consumer is starting to look more at the science and credibility of the products as well as the ingredients in those products, said Metabolic Technologies' Baier. "Additionally, the consumer is spending time researching how to properly use the product/ingredient—pre-workout versus post-workout, dosing relative to body weight, etc."

Baier added that for ingredients to be successful in the market, suppliers need to know the answers to these questions and have the research studies to support their claims for optimal benefit. "With that said, consumers have been looking at ways to get the most out of their workouts/training sessions, and their focus has shifted to pre- and post-workout nutrition as well as the needs during a workout. Recovery is critical for

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accomplishing this goal of getting the most out of the time they are putting in, and clearly, recovery can be impacted by nutritional interventions. It isn't just about re-feeding macronutrients; products should be developed that target the underlying mechanisms of recovery—such as preventing muscle damage, increasing protein synthesis and reducing protein breakdown." Meta-bolic Technologies developed the compound HMB, a metabolite of the amino acid leucine.

Science Backing

Continually researching potential benefits of any ingredient is instrumental to organizational success. "Not only does it aid in the expansion of market scope and business development, but it keeps the life blood of the nutraceutical industry—that is, science based on empirical data—very fresh," said VonderBrink. "By making all new data available to existing and potential customers, we can get in front of and alleviate some of the issues private labelers face during formulation and launch. Bioenergy Life Science is committed to helping industry reduce the cost of bringing a product to market, which can then be passed on to the consumer."

According to Baier, Metabolic Technologies works with researchers at

academic institutions to perform the efficacy and safety studies on existing ingredients as well as on new product development. This third-party, independent process is critical to properly evaluate ingredients. "Once a study is complete and the data are analyzed, the results are submitted to a peer-reviewed scientific journal. This adds another level of independent scrutiny to the process," Baier explained. "Once published, the results are available for finished product manufacturers and retailers to reference and use in promotional pieces."

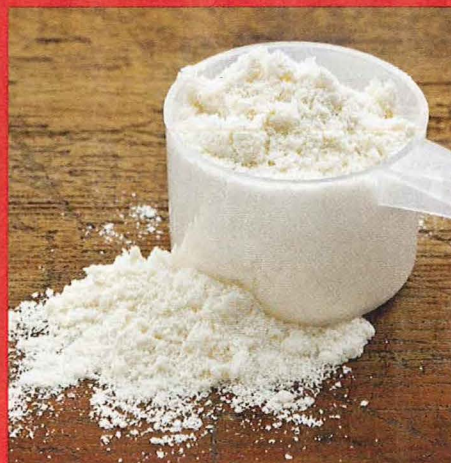
Mathieu Dondain, director of marketing and communications with Nexira, a French company with U.S. offices in New Jersey, noted that his company heavily invests in clinical studies

Rice Protein Benefits Found Equal to Whey

The findings of a double-blind study at the University of Tampa proved for the first time that plant-based rice protein has identical benefits to dairy-based whey protein.

The study results, which specifically followed a tightly controlled population of seasoned bodybuilders, tracking how they built muscle and experienced the same rates of repair and soreness, were presented at the 2013 Natural Products Expo on March 9, 2013 by its co-author, Dr. Ralf Jaeger, FISSN, CISSN, MBA. Jaeger was joined by several influencers in the sports nutrition, rice fractioning, vegan education and fitness industries to convey the impact and scope of this discovery. The rice protein the researchers chose for the study was Growing Naturals' Organic Rice Protein made with Axiom Food's Oryzatein, which has recently become a monographed industry standard for its many qualities, noted of which is its unique hexane-free fractioning process used to isolate protein from whole grain brown rice.

"In the past, studies have shown that the combination of resistance exercise with consumption of animal-derived protein (such as whey, casein, eggs, meat) has had a different effect on muscle growth than when resistance exercise was paired with plant-based protein such soy," said Jaeger. "The results of this study show, for the



first time, that this has changed."

According to Jaeger, the objective of the study, titled, 'Rice Protein Increases Lean Body Mass, Muscle Hypertrophy, Power and Strength Comparable to Whey Protein Following Resistance Exercise,' was to determine if high doses of rice protein isolate could increase recovery and elicit adequate changes in body composition compared to whey protein isolate if given following periodized resistance-training.

For the study, the researchers used 24 healthy, college-aged, resistance-trained participants. Each had a minimum of one year of strength training experience. The participants were randomly and equally divided into two groups. Each group consumed 48 g

of rice or whey protein isolate immediately following training on training days only. Participants followed a specific training protocol three times a week for eight weeks under direct supervision. The supplements contained equal amounts of calories and protein. Before and after the first training session, participants gave ratings for perceived recovery, soreness and readiness to train. At baseline (week 0), midway (week 4) and end (week 8), participants were measured for muscle thickness, body composition, bench press and leg press strength. Changes were measured and recorded.

Results showed there were no significant differences in the ratings between the groups supplemented with rice versus whey for recovery. In other words, each supplement produced a similar effect. Moreover, both groups experienced significant changes in body composition, strength and power from week 0 to week 8. Specifically, muscle mass, strength and power increased while body fat decreased. The changes observed were similar for both groups.

"In summary, we found that rice protein isolate administration post-resistance exercise decreases fat-mass and increases lean body mass, skeletal muscle hypertrophy, power and strength comparable to whey protein isolate," said Jaeger.



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because it's aware of their importance when it comes to promoting a product.

Nexira's latest clinical study was for its ViNitrox ingredient, which is a proprietary synergistic combination of apple and grape polyphenols. The double-blind, crossover, placebo-controlled study on 50 athletes, 25 to 45 years old, demonstrated that under intensive effort, 500 mg/day of ViNitrox improves physical capabilities and ignite muscle performance. The scientific study highlighted that ViNitrox increases physical training time by 10 percent and delays the fatigue barrier by 13 percent. "In that way, clinical study results can be real selling points not only for our customers, but also for the final consumer," Dondain added.



Axiom conducts randomized, double-blind, clinical trials as a manufacturer of novel dietary protein sources. "Being one of the first to market, we have to have scientific evidence to prove that they work as well as other common protein sources, in order to gain mass market acceptance," Janow explained. "We believe that data should aim to be published in an open-access scientific journal so that anyone, from scientists to consumers, has access to the results. We would also strive to educate our customers (finished product manufacturers) on how the results benefit their products, including possible claims."

Beyond joint health, a number of human clinical trials on Bergstrom Nutrition's OptiMSM showing benefits in exercise recovery have been published within the last two years. The data suggest that OptiMSM helps reduce muscle soreness following acute bouts of strenu-

ous exercise. These studies also suggest that it may protect the body from oxidative damage and increase overall antioxidant defense and capacity. And Bergstrom actively works to spread the word about these positive results.

"While the traditional path of publications in peer-reviewed journals followed by presentations to research and development groups at trade shows is a good first step, raising consumer awareness to create pull-through is really the key," said Rod Benjamin, the company's director of technical development. "Utilizing social media to spread the word about new science is a relatively new tool but its effectiveness for spreading consumer awareness should not be overlooked."



OptiMSM®

Illegal Plays

While regulatory scrutiny has been looming, suppliers are finding that strict development processes are deemed necessary. Baier said only after quality manufacturing is ensured, safety has been proven and effectiveness has been scientifically verified, would the company ever consider introducing a product to the market. "With that said, the company and our ingredients already meet or exceed the regulatory standards, so the increased regulatory scrutiny will only help to level the playing field. Additionally, there are numerous companies that work as hard as we do to meet or exceed the regulatory requirements, and those that take a different approach will likely be impacted much more and will be faced with a decision to adapt or close their doors."

Other suppliers that provide effective, safe and banned substance-free products agree they aren't hampered by government scrutiny. However, smaller companies with limited resources seeking to enter international markets may find barriers, noted Axiom Foods' Janow. "Despite our providing novel vegan proteins, we run into fewer issues because protein is an essential macronutrient, where the effect of protein is known to be both beneficial and safe for human consumption. We consider our protein a food, thus we have a

nutrition label in the U.S., while in other countries, such as Brazil, that label would be scrutinized more."

The recent warning and ban on DMAA was targeted to a limited sector in the industry, according to Bioenergy's VonderBrink, who said it affected a narrow range of pre-workout stimulant-based products containing a species of methylated amine that was shown to be dangerous. "This specific molecule dimethylamylamine proved to be detrimental to individuals after extended use. Using a species of amine that is akin to taking amphetamines prior to activity, it's no wonder that it was banned."

But the negative publicity will have an impact, Baier predicted. "As products fail to meet the FDA's scrutiny and are pulled from the market, there will be media coverage around the individual ingredient as well as the entire category. Unfortunately, the more these situations happen, the more the entire sports nutrition category will be hurt. Therefore, the industry needs to take a closer look at how we can prevent these issues from ever happening in the first place."



Fast Forward

As for where specific sports nutrition ingredients are headed, new protein sources look especially strong. Axiom Foods is investing heavily in R&D for chemical-free fractionation of different plant protein sources that provide a secondary nutritional boost, such as split peas, which can provide protein plus iron; sacha inchi, which can provide protein plus omegas; and cranberries, which can provide protein plus antioxidants.

Nexira is offering Prothy R80, a GMO-free hydrolyzed rice protein extract rich in BCAAs (branch chain amino acids), which help to reduce muscle damage and improve recovery by promoting muscle protein synthesis.

Overall, suppliers are betting on more science-backed ingredients and products on the market. "Additionally, with the uncertainty around the most recent published FDA guidelines, multi-ingredient products will probably be under greater scrutiny, which could push the

market toward single-ingredient products or simple combination products that have research supporting both efficacy and safety of such combinations," added Baier. "We believe the future holds more benefits-based products, cleaner labels, more natural and superfood-enhanced products, and more protein blends." **NIE**

Extra! Extra!
Visit www.niemagazine.com to read about suppliers efforts to provide "clean" ingredients.

Lead image provided courtesy of Bergstrom Nutrition

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