

2016 PROTEIN TRENDS & TECHNOLOGIES SEMINAR

SUMMARY: BUSINESS STRATEGIES



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2017 R&D Report:
Protein Ingredients
Pages 10-11

A GLOBAL FOOD FORUMS, INC. EVENT



2016 Protein Trends & Technologies Seminar

Business Highlights Summary

Global Food Forums, Inc.'s fourth annual Protein Trends & Technologies Seminar was held in Oak Brook, Ill., USA. A Pre-conference: Business Strategies program was held on May 3rd, 2016, followed by a Technical Program: Formulating with Proteins on May 4th.

Speakers at the Pre-conference provided information for upper-level managers to help them guide their company's protein ingredient business, and for those for whom the protein ingredient marketplace has significant impact on new product development strategies and/or their operations. Total registrations for the Pre-conference and Technical Program reached 253, which slightly broke all previous records.

Industry experts provided insights into consumer and product trends, market volatility, global regulations and emerging market opportunities, among other topics. Highlights from the Pre-conference's seven speakers are provided here.

Attendees could register separately for the Pre-conference program or also for the next day's Technical Program: Formulating with Proteins, for a cost savings. Complimentary access to a digital version of this post-conference summary, as well as the post-conference



■ The 2016 Protein Trends & Technologies Seminar had 253 registrants overall with 197 attending the Pre-conference: Business Strategies.

summary of the Technical Program and PDFs of the PowerPoint presentations may be downloaded from www.GlobalFoodForums.com/2016-protein-seminar/store.

We hope to see you at our 2017 Protein Trends & Technologies Seminar, May 23rd and 24th, Westin Hotel NW, Itasca, Ill., USA! (www.GlobalFoodForums.com/2017-protein-seminar)

Table of Contents

■ ***Capitalizing on the Next Generation of Protein Opportunities; Sustaining the Rush***

Elizabeth Sloan, Ph.D., President, Sloan Trends, Inc.

■ ***Perspectives on Investments & Acquisitions in the Protein Supply and Finished Products Industry***

Matthew Roberts, Ph.D., Chief Scientific Officer, NBTY, Inc.

■ ***Managing the Dairy Protein Markets: Forces to Watch in the Coming Years***

Duane Banderob, MSc, COO, Dairy.com and leader, Blimling and Associates

■ ***What's for Dinner? Behaviors, Products, and Services Creating the New Future of Food***

Justin Shimek, Ph.D., CEO and Chief Technology Officer, Mattson

■ ***Global Perspectives: An Overview of the Global Protein Landscape***

Chris Schmidt, Senior Consumer Health Analyst, Euromonitor International

■ ***High on Protein: Insights into a Consumer Search for Health***

Andrew Mandzy, MBA, Director Strategic Insights, Nielsen

■ ***SPECIAL SESSION: Future Signals: Identifying Behavioral, Marketplace and Technology Trends***

Mike Lee, MBA, CEO and Founder, Studio Industries

■ ***BONUS SECTION! Resources on Protein Ingredient Business Strategies***

An interactive section with QR codes and URLs to web pages with additional information.

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Next Generation Protein Opportunities: Sustaining the Rush

When looking at protein demographics data, the tendency is to focus on the X, Y and Millennial generations—and on how to create new products that appeal to those consumers. In discussing the next generation in protein opportunities, Elizabeth Sloan, Ph.D., President, Sloan Trends, Inc., recommended looking to other segments, as well.

Boomers are turning 70 and are taking what was familiar when they were young and bringing it along as they age. “Half the U.S. population is over 50; that’s where the money is,” Sloan said.

“Tiredness/Lack of Energy” is one of the top consumer concerns of those 50 and over. The connection of protein to both physical and mental energy is emerging. “Providing physical and mental energy to help adults and children get through the day and remain alert/energized is a top motivator” to get consumers to eat breakfast. The concept that foods can naturally provide energy is both believable and well-understood. More than half of 18-24-year-olds, for example, are regular energy drink users, Sloan pointed out. Protein drinks could be reformulated to better match the needs and interests of those older, as well, she suggested.

The \$31 billion sports nutrition sector has expanded into the mainstream in recent years. The number of people regularly exercising has increased, with the most noticeable group being the 50+ crowd. Activities such as gym usage (14%), aerobic exercise (46%), walking (25%) and running (87%) have all gone up in the past five years.

When the 50+ group is asked about solutions to their health concerns, the number one response, consistently, is exercise. Mobility is a major consumer concern for aging consumers, and it’s firmly tied to weight loss and muscle loss—two areas already firmly aligned with protein. According to a 2014 Gallup “Study of U.S. Market for Vitamins & Other Dietary Supplements,” 30% of adults mention age-related muscle loss and loss of strength as issues of concern. Sloan added that “aligning joints with muscle and protein is a very big idea.”

Consumers link protein to muscle health exercise recovery, satiety, energy and weight loss (all more than 60%); lately, a new focus has been on protein to improve hair, skin and nail health (32%). Additionally, according to the “2014 Gallup Study of Protein,” 33% of adults surveyed also associate immunity as a health benefit of protein.

Consumers turn to protein for weight loss, and this area is “quietly on fire,” Sloan said. It’s up 7% in the last year, and the weight-loss business in the past five years has been driven primarily by men (69% of the growth), especially young ones.

Older women are trying to lose weight, while more senior women are trying to maintain weight. Women 55+ are the biggest bar consumers. “The largest untapped market in the U.S. is post-menopausal women,” Sloan advised. Linking weight control and proteins for this group is an opportunity.



■ **Half the U.S. population is over 50—a group whose interest in exercising has noticeable increased. Protein consumption fits well with this trend.**

In grocery meat cases, many retailers now provide nutrition information for fresh meat/poultry. Millennials want more energy, iron and protein—so retailers also call out protein in the produce department. Said Sloan, “Those buying fresh, minimally processed food are the same group who buy fortified foods and who want added nutrition and nutrition claims on fresh/refrigerated foods.”

Millennials still drive several protein trends, including plant-based proteins: 76% of households ate protein alternatives for weekly dinners last year, while the use of meat/poultry fell to an average of 3.7 times/week. There is a \$2.7 billion opportunity in plant-based dairy foods, beyond beverages, Sloan added.

Millennial parents drive opportunities in the \$41 billion kid-specific market. More than 50% of parents are concerned about development and protection against diseases later in life. Some 47% of households with children actively seek out protein.

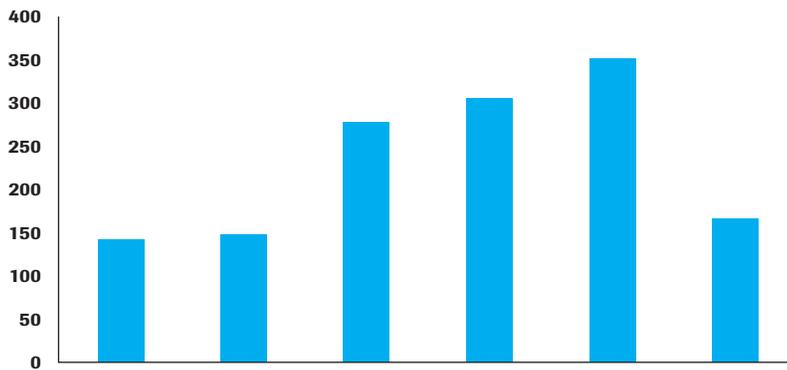
Another new arena for protein is the pet food market, which always follows human food trends. Also, the Latino, Asian and African-American segments are all more likely to seek out protein claims compared to Caucasians; this also is a relatively untapped arena.

“Capitalizing on the Next Generation of Protein Opportunities: Sustaining the Rush,” A. Elizabeth Sloan, Ph.D., President, Sloan Trends, Inc., lizsloan@sloantrend.com, 760-741-9611, www.sloantrend.com

Sustainable Protein: Nourishing the Population While Protecting the Environment

In 1960, experts estimated that the amount of food needed by the world in 1990 would double. Today, experts are saying the same doubling of the food supply will be needed by 2050, said Matthew Roberts, CSO for Nature’s Bounty (NBTY), in his Protein Trends & Technology Seminars presentation. However, unlike 1960, the challenge now is a question of land resources. About 12% of the world’s land area is arable; another 26% can be used for grazing. However, those areas are declining.

Plant-based Protein Food Product Launches



SOURCE: MINTEL; 2016 PROTEIN TRENDS & TECHNOLOGIES SEMINAR

■ When this data was released in early 2016, there were already more than 160 new plant-based protein food product launches for 2016, noted Roberts.

The answer, Roberts said, must be plant proteins—and not only due to resources, but because of growing consumer concerns for health, climate change and animal welfare. “I think we’re in a really important time, not only as industry professionals, but also as human beings. The nature of food, agriculture and nutrition is changing, and protein is center-stage.”

In 1945, half of the world was malnourished, compared to roughly 15% today. However, one billion people have protein-deficient diets. “We’re being squeezed on the animal-production side but, on the plant side, we’re increasing production,” Roberts added.

Plant proteins are on the rise across all nutrient supplements. Some 41% of adults made an effort to limit/avoid meat in 2013, Roberts said. The vegetarian retail market reached \$1.6 billion in sales in 2011 and has been rising ever since. Plant-based protein food product launches have likewise risen, according to Mintel, from about 150 in 2011 to more than 350 in 2015. (See chart “Plant-based Protein Food Product Launches.”)

“Vegetarianism has been on the rise for a number of years, but what we’re starting to see is the halo effect—with friends, family and extended network being influenced,” Roberts said. “They may not want to be vegetarian, but they appreciate the lifestyle; hence the rise of the flexitarian.”

More than half of U.S. consumers report eating some sort of meat alternative, including eggs, multiple times a week. Consumption of meat alternatives is also increasing in Europe, as 31% of Germans, 38% of French and 45% of Italians claim to be actively reducing consumption of red meat.

That said, plant proteins have some struggles. On the nutritional side, there are factors like fiber and under-availability of leucine that reduce protein absorption and muscle synthesis. On the consumer side, there are spreading health misconceptions about soy. Younger consumers are the most likely to seek meat alternatives for protein. However, soy is con-

tending with negative health perceptions—even though studies have indicated otherwise—making Millennials highly likely to avoid it. Mintel’s free-from food statistics show that 18-24, 25-34 and 35-44-year-old internet users all seek out “soy-free” at high rates. Soy is still big in Asia, however, with plant proteins eaten by 86% in China, 59% in Germany and roughly a third in both the U.S. and UK in 2014. Asia’s wide acceptance of soy makes it a prime target for other plant protein sources, Roberts added.

Plant proteins are estimated to account for 43% of the total protein ingredients market volume, according to Frost & Sullivan, with soy in the lead, followed by wheat, and then pea, which experts believe to have strong growth potential. Soy likewise leads the way for plant-based protein used in new food and drink launches from 2012-2014 (at 60%), followed by wheat (24%)—then pea (7%), rice (3%) and maize (2%).

The business world has begun investing in plant proteins. Cargill sold its pork business and opted to acquire a Norwegian agriculture company. Monde Nissin bought Quorn, and White Wave bought Vega—while Hormel, Glanbia, Post, Hershey and General Mills have also made moves. Almond milk is now a \$1.3 billion segment dominated by three players, and plant-based beverages are 7.5% of milk dollar sales and growing at between 20-30%. Food and ag tech attracted \$3.5 billion in venture capital globally in 2015, mostly going to increase yields and decrease inputs, but much of it concerns proteins.

The future will both bring new products—plant alternatives are already entering the ice cream, yogurt, cheese and creamer sectors—as well as protein system blends, Roberts said. Imagine combining characteristics like the ROI of soy, the supply of corn, the elasticity of algae, the label claims of wheat and so forth. “There’re a lot of good reasons to do that—from an economic perspective; from a sustainability perspective; and from an agricultural perspective,” he added.

“Sustainable Protein: Nourishing the Population While Protecting the Environment,” Matthew Roberts, CEO, Nature’s Bounty, contact info preferred

The Dairy Protein Markets: Forces to Watch in the Coming Years

Duane Banderob has noticed that the conversation has shifted in recent years in regards to milk production. Cow production amounts used to be the central topic—farmers bragged about their cow populations and how much each would yield—but now it’s all about milk components, noted Banderob, MSc, Chief Operating Officer, Dairy.com; and Leader, Consulting and Market Intelligence Services, Blimling and Associates.

Typical points of discussion, said Banderob, now revolve around questions such as: “What’s your fat test? How much protein do you get out of that cow? Should we go to Jerseys, because the cheese yield is higher?” He continued, “We’ve seen this shift in the industry, as consumer trends have moved to protein fortification, and health and wellness.”

Milk from cows is typically between 12-14% solids. Separating out proteins is a difficult and complicated process and, therefore, it’s expensive. For example, 100lbs of milk makes 10lbs of cheese, 0.6lbs of whey protein concentrate that contains 80% protein (WPC 80), and 4.7lbs of permeate, or 3.1lbs of lactose. In other words, four tanker loads of whole milk would be required for one pallet of WPC 80. The milk protein concentrate (MPC) world isn’t quite as dire, Banderob added, as 100lbs of milk makes 3.5lbs of MPC 85, 9lbs of cream and 5.2lbs of milk permeate. A truckload of MPC 85 requires 24 tankers of milk.

Turning to margins, he used the example of a dairy plant that processes 3 million lbs of milk per day to make Cheddar, WPC 80 and dry permeate. In March 2014, the market would bear \$30.73 in revenue per 100-weight of milk. In March 2016, however, this dropped to only \$18.16. That kind of volatility is common, and the price of high-protein ingredients, year-over-year illustrates this further. WPC 80 started below \$2 per lb in 2009, then peaked at nearly \$5 in 2012—and is now back below \$2.

As most well know, there is definitely a high demand for proteins, Banderob said, and much is also available. The U.S. is the primary global supplier of WPC 80 and WPI, with 60% of the market. However, it supplies a smaller portion of MPC than New Zealand, with a 42% market share of MPC 80/85. The EU has 28% of WPC and 17% of MPC market, even though EU’s total milk production is 6.8 times larger than New Zealand’s and 1.6 times larger than the U.S.’s.

With the EU’s production quotas now a thing of the past, its milk production has grown significantly. This has meant billions in new investments in the form of value-added proteins and infant formula. In order to compete for the high-protein space, American producers are likewise increasing new investment—especially for WPC 80 and WPI [which generally are 90+% protein], according to the USDA. Banderob opined future investments for dairy may include native whey, micellar casein, protein fractions and hydrolysates.

New Zealand’s export market has been stable for the past 15 years, while the U.S. and EU have grown significantly. The U.S. has roughly half the global market share. “It’s already a global marketplace, but it’s going to become a battleground for proteins.”

Demand is booming in Asia, which accounts for nearly half the global whey protein imports. In particular, China has had the fastest growth in demand in the past decade, followed by the U.S. Despite the demand, milk output is expanding to the point of oversaturation, Banderob said. In 2015, output grew by 9 billion lbs, while prices in EU have shown continued drops since 2014, and global forecasts show a very slow price recovery.



📌 **The U.S. is the primary global supplier of whey protein concentrates and isolates, with 60% of the market. Asia, in particular China, accounts for nearly half the global whey protein imports.**

While the near future may mean bad things for rural farmers, it’s a good time to be a protein formulator.

“Managing the Dairy Protein Markets: Forces to Watch in the Coming Years,” Duane Banderob, MSc, Chief Operating Officer, Dairy.com; and Consulting and Marketing Services Leader, Blimling and Associates, dbanderob@blimling.com

Behaviors, Products and Services Creating the New Future of Food

To those still clinging to the idea that people will never stop going to the grocery store, Justin Shimek, Ph.D., CEO, Mattson, has a few examples of companies who said something similar: Borders and Blockbuster. “It’s not quite as dire as that,” he clarified, “but there will be fundamental new ways that consumers source significant parts of their food basket every week.”

As an independent product developer, Mattson is paying close attention to these seismic shifts in distribution channels. Many innovative businesses and services are reframing the system to meet consumer needs in new ways. “This presents new opportunities, as well as challenges,” Shimek added.

Gevalia Coffee’s mail-order subscription service didn’t light the world on fire in the early 80s, but perhaps it was ahead of its time. Everything from beauty products to collectable “nerd items” have successful subscription services today. In the food sector, examples include curated snack companies, like NatureBox, Graze and Nibblr. Brick-and-mortars have started to notice, such as Wal-Mart, Safeway and Fresh Direct, plus brands like Starbucks, Crock-Pot and Soylent.

“When you think about it from a set-it [up]-and-forget-it perspective,” Shimek said, these new food distribution systems are becoming huge, in terms of volume and revenue potential, and shouldn’t only be opportunities for entrepreneurs.

This also applies to an area he refers to as “new scratch cooking.” From a consumer perspective, cooking from scratch is more about an

experience. Blue Apron, Plated and Fresh Realm are popular meal-subscription services that send entire packages of groceries for consumers to create specific meals.

“It’s a kit and a facilitated experience,” he said, where everything is already measured out, portioned and ready to be created—so you don’t have to engage in the tedious parts of the experience. “There can still be some deep cooking, but you have a *sous chef* helping you with the prep.”

Technomic predicts the meal-kit service market to grow between \$3-5 billion in the next decade. Blue Apron and Plated started in 2012 and have made roughly \$80 million. HelloFresh, a European equivalent, delivers more than 4 million meals a month.

Food delivery has also crossed into the digital, on-demand realm. UberEats, GrubHub, Postmates, Seamless and Caviar are examples of food-delivery companies that make restaurants and sometimes even stores accessible for delivery. You interact with them, usually through an app. They handle the order and pickup, and they deliver to your door. Even high-end restaurants are increasingly offering takeout to accommodate this trend, Shimek said.

Munchery is an example of a food delivery company that not only delivers meals, but also prepares them. The model started as a way for chefs to make food in restaurants during off-hours, but has since moved to a commercial kitchen for delivering same-day chilled meals. SpoonRocket offered fresh, locally made hot meals for under \$10. Each vehicle in their fleet was stocked with warming ovens containing the meals; these vehicles patrolled their service area awaiting orders. It has since closed, but the platform will soon live on in Latin America.

On-demand has also spread to groceries. Instacart and Google Shopping Express are essentially personal shoppers that can handle several stores in one trip. Curbside is a similar service, where they do all your shopping at a store; you pull up to the curb, they load everything in, and you drive away. All essentially serve as distribution centers that don’t hold any inventory.

Increasingly, food products will not be found sitting on a shelf. The decision as to what foods to eat will be researched and made online by consumers. In this one location, they will have most all store brands and customers will be able to shop 365 days a year. There will be interesting collisions of how food is prepared and distributed, Shimek said. Packaged food must still be shelf-evident, but now it’s a “new shelf” with a new set of competitors.

Amazon is a cross-section of many of these trends, with its Amazon Prime, Amazon Fresh, Prime Pantry and Prime Now services.

“What this means is taste, convenience, fresh, local, service and other expectations are all being reset by new competitors,” Shimek said.

“What’s for Dinner? Behaviors, Products and Services Creating the New Future of Food,” Justin Shimek, Ph.D., CEO, Mattson, 650-574-8824, justin@foodcom.com

Global Perspectives: An Overview of the Global Protein Landscape

By analyzing the data gathered by Euromonitor International, Chris Schmidt, then Senior Consumer Health Analyst, Euromonitor, indicated that several things are clear, in relation to consumer interest in proteins. It’s on the rise; it hasn’t showed signs of stopping; and there’s a wealth of opportunities for continued growth.

Euromonitor tracks protein use and consumption in the sports protein products, meal replacement slimming (weight management), protein supplements and supplement nutrition drinks segments. All have grown in retail sales in the past five years, but sports protein products have seen the fastest and most significant growth—from roughly \$5.4 billion in 2010 to \$8.6 billion in 2015. [Note: Euromonitor has recategorized and updated these categories since the presentation.]

Northern European countries, such as Finland, Sweden, Germany and the Netherlands, consume the most grams of protein per capita through packaged foods and beverages, according to their 2015 data. Southeast Asian countries, like Indonesia, Thailand, Vietnam, India and the Philippines, are among the lowest.

“We don’t see that one-to-one relationship between income and consumption,” he said. For example, of the countries studied, the second highest level of protein per capita per day is consumed by consumers in Turkey, while those in the more developed consumer markets, like Singapore and Taiwan, have some of the lowest consumption levels. This is at least partly due to local, traditional eating habits and the amount of fresh foods consumed.

Despite their low amounts of protein, baked goods contributed the largest portion of daily protein consumption globally in 2015 because of the sheer volume of these products consumed. Although high-protein pastas and breads are popular in Italy and Canada, respectively, dairy is the next highest product segment that contributes to protein consumption. And it is still growing—however, the fastest growing contributors of the past five years were dried, processed foods and sweet/savory snacks.

Sports protein products generated 82% of the global category sales in 2015—in the form of powders, ready-to-go drinks and bars. The U.S. accounts for almost 70% of those product sales, followed by the UK and Australia, both fast growing markets. Singapore and Scandinavian countries are among the highest for consumption per household.

In protein supplements, China is the top market and is still expected to grow, Schmidt said. At an estimated \$1.1 billion in sales in 2015, it’s significantly larger than the next top market: The U.S. Currently, America leads in the supplement nutrition drinks market, but the Asia Pacific region is expected to drive that growth moving forward.

As for trends, Schmidt explains that clean label has lagged in the supplement arena but is quickly gaining momentum. “That line between

food and supplements is blurring, so they're more demanding of their supplements now," he said. Similarly, Euromonitor expects more non-GMO, allergen-free and ethical claims in these products in the near future.

Protein products are restricting their own growth by utilizing only tried-and-true flavors, particularly chocolate and vanilla, Schmidt said. Quest Bar's rapid growth can be attributed in part to its more adventurous portfolio of flavors. Brands like ProBar and Epic are pushing the flavor boundaries with exciting, truly gourmet offerings.

"Milk protein sources are still king of the protein aisle," Schmidt said, but plant sources are expanding in the retail environment and capitalizing on sustainability, trendy "whole-

foods" (like ancient grains), and additional benefits like fiber and omega fatty acids. Despite the heavy media coverage and novelty, it's unclear whether insect proteins will remain a niche or be the next big thing. "That ick factor is a big one, especially in Western markets, but the real hindrance is the infrastructure and supply chain, which contributes to high prices," Schmidt said.

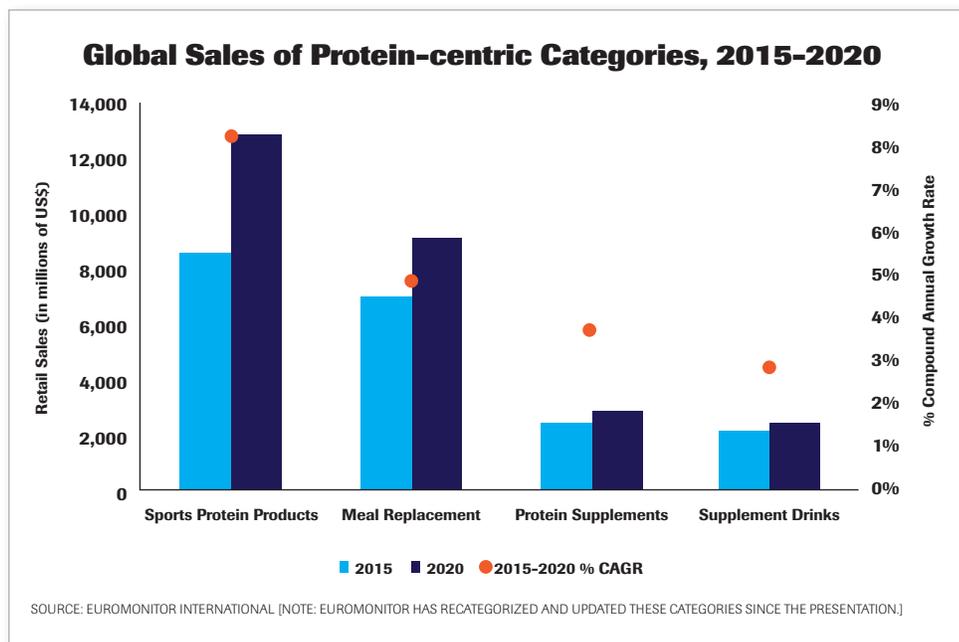
"All of these categories are going to grow, but we're often asked which categories to focus on," Schmidt concluded. "I think sports nutrition is the one we still expect to grow the fastest; it's the largest category, and it has an inherently healthy positioning that draws a lot of consumers."

New consumer segments are continuing to appear with a protein orientation, but also are bringing with them more demands and more competition, he noted. The key is education—simply communicating your product's benefits goes a long way toward not only raising awareness of your product, but also starting a relationship with consumers and encouraging a willingness in them to pay a premium.

"Global Perspectives: An Overview of the Global Protein Landscape," Chris Schmidt, former Senior Consumer Health Analyst, Euromonitor International; Marissa Bosler, Communications Executive, Euromonitor International, marissa.bosler@euromonitor.com, 312-477-8908

High on Protein: Insights into a Consumer Search for Health

While the Consumer Confidence Index climbed to 96 in March 2016, other household financial statistics weren't as hopeful. "Consumers are getting more confident," said Andrew Mandzy, Director of Strategic Insights, Nielsen, "but there're some challenges out there"—namely, the income inequality between the most and least affluent households,



■ All categories are expected to grow, but Schmidt says sports nutrition will continue to be the fastest.

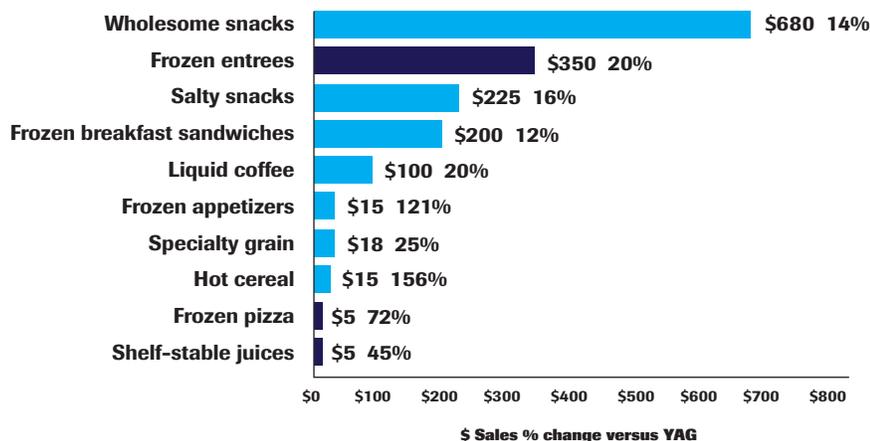
which is the widest it's ever been. The gap has created an equally polarized consumer landscape.

On one hand, chains like Costco and Whole Foods patronized by upper-income consumers are on the rise; conversely, discount-oriented retailers, like Aldi and dollar stores, are also flourishing. Of the roughly 24,000 new retail stores opening since 2007, 68% are skewing toward lower income shoppers. "Consumers are more polarized, and the retail environment is more fragmented," he said, adding that conventional grocers are projected to lose their a share of the marketplace.

What this means for perimeter shopping depends on the product. While there is a wide disparity in spending between affluent and poor households for seafood and produce, this is less true for the meat aisle. Overall, nearly a quarter million fewer households bought fresh meat in 2015 compared to the year before, accounting for nearly \$74 million in lost sales. Likewise, there has been a decline in how much each household spends per trip (5%) and their annual spend (3%) on meat. Affluent households aren't likely to change behaviors, though they may seek out more cost-saving retailers. Meanwhile, the less affluent households are willing to buy less frequently, and purchase less expensive cuts and smaller packages of meat, noted Mandzy.

There is, however, an area where these polarized consumers agree. After the economy and finances, U.S. consumers' top concern is health. Two thirds are eating healthier than before, with 64% buying healthier foods; 60% saying quality is more important than price; and 57% doing online research on nutrition and healthy recipes. They're monitoring labels more, with more than 50% selecting foods based on the ingredient list and nutritional panel—roughly 10% higher than in 2006, said

Protein Claim Sales & Growth



SOURCE: NIELSEN; 2016 PROTEIN TRENDS & TECHNOLOGIES SEMINAR

■ **Protein is driving growth in many categories, including those that are contracting overall. Frozen entrees are down, but those with protein claims are up.**

Mandzy. More than a third say “chemicals” is their top food-safety concern, while they find keywords like “fresh,” “reduced calories,” “natural” and “low in sugar” as particularly helpful.

Nielsen numbers also show changes based on packaging claims, with health and wellness outpacing retail growth at a steady clip. While retail grows at 2% per year, “natural” products are up 11%; organic is up 16%; and GMO-free is up 17% annually. “We’re seeing a lot of growth in that space in indulgent categories, as well as traditionally healthy categories,” Mandzy said. “This isn’t happening in one specific place or category; it’s happening everywhere.”

Natural, organic and GMO claims have increased in the dairy, frozen and meat aisles. While “conventional” meat sales are down 2%, he notes that meat with claims have risen 11%. More specifically, natural claims are up 27%; hormone presence [or rather the lack of] is up 29%; antibiotic-free is up 19%; and organic is up 30% in sales growth.

When asked to rank attributes that are important in influencing their food decisions, roughly 60% of consumers chose the following: made from vegetables/fruits; high in protein; high in fiber; portion controlled; and whole grain. “We also did a survey recently that asked people to rate the protein content in certain foods,” Mandzy said, “and we noticed a disparity in knowledge about what protein exists in certain foods.” Roughly half of people don’t think a ribeye steak is high in protein, while about 60% don’t think chicken breast or pork loin is high in protein. Even more, nearly 80% of shoppers think peanut butter has as much protein as fresh meat.

Nielsen tracks protein presence—“a \$19 billion a year claim,” Mandzy added—“and it’s grown, on average over the last four and a half years, by about 7.5%.” Plant-based proteins are growing at nearly 8% per year,

with lentils and chickpeas of note. Protein call-outs on packages are aiding several areas of the store. (See chart “Protein Claim Sales & Growth.”)

As for where things are headed, Nielsen’s data shows some demographic shifts. Health claims skew toward higher income households and the up-and-coming Millennials, who Mandzy said are particularly concerned about transparency. Meanwhile, Baby Boomers trend more toward specific benefits, such as fiber (62%), heart-healthy (57%), healthy oils/fats (49%) and proteins (43%).

About 40% of households contend with some type of ailment; 50% of the sufferers don’t seek out a doctor for it; and 75% believe they can manage those issues with proper nutrition. One would expect the food industry to capitalize on this.

“High on Protein: Insights into a Consumer Search for Health,” Andrew Mandzy, Director of Strategic Insights, Nielsen, Andrew.Mandzy@Nielsen.com

Amplifying Weak Signals: A Framework for Foresight

Fifty years from now, where will the food industry be? What behavioral, technological and environmental developments will have taken place? What will the typical grocery store look like?

Such prognostications are familiar territory for Mike Lee and Studio Industries, an agency that helps design new products, evolve existing ones and craft innovation strategies. As a side project, the firm created The Future Market—a theoretical grocery store stocked with products from the future. You can read all about it in their newspaper, *The Future Chronicle*. All of this started, Lee explained, as their firm tried to imagine what the world of food might look like in 50 years.

The key to Studio Industries’ success is their methodology for strategic planning. “Our mantra,” Lee said, “is ‘Better innovation in food today starts with more ambitious thinking about tomorrow.’” When they started Future Market, the rule was that ideas do not just come from nowhere.

“They have to be built up from something that exists today,” he said. “The car industry does this. If you’ve ever been to an auto show, you’ll see that, in addition to the car that they produce every year, there’s also a plan for a car that could exist. I looked at that and said, ‘Nobody’s really doing that for the supermarket.’”

Lee describes the starting points for these innovations as weak signals—little ideas that exist today and could bloom in the future. Predicting them can be crucial to a company’s success. When you don’t predict them, the signal you’re missing could be your end. Case in



point: Blockbuster. Weak signals, like automated distributors (Redbox), direct-to-consumer services (Netflix) and on-demand streaming, went ignored or noticed too late. “Everyone could see these,” Lee says. “It’s a matter of how you look at them and treat them that causes you to evolve toward the future, rather than lose out.”

He breaks down the process to three steps: Gather, Amplify and Prioritize. When done well, Lee said, companies move with the changing tides; shape where the industry goes; and build new competitive advantages.

Gathering data is straightforward, but Studio Industries is mindful of more than quantitative analysis and monitoring trends in media. They spent hours with individual consumers to explore their daily food routines, for example. “We trade off the volume of data for depth, and I would argue that standing in someone’s kitchen and watching them gives you so much more information than a survey.”

What you’re hoping to find is a weak signal, which Lee defined as “evidence of a new behavior, technology or environmental condition that is small and emerging, but could lead to powerful outcomes.” To amplify that signal, a grid is used for behavioral, technological and environmental possibilities.

Lee offered 3D printing as an example. Right now, chefs can use 3D printing for the “wow factor” (behavior); startups could make printers for ingredients (technology); and printer companies could partner with food providers (environment). In considering the future, Lee asks questions such as: What if there is a technology that is twice as good at half the price? What happens when the behavior is adopted by the masses? What happens when barriers to entry are broken down?

“Could you see a time when food reviewers are critiquing this 3D printer vs. that one?” he asks. “How about big box stores selling food in printer cartridges?”

As each of those new reflections arise, Lee stressed the use of divergent and convergent thinking—wide funnels of thought early on that narrow to collect the proverbial cream rising to the top. Each of those ideas are then charted along two axes: impact and probability.

This all feeds into a strategic plan. If an idea is both high-impact and high-probability, it should be acted upon. If it’s high-impact and low-probability, it should be investigated. If it’s low-impact, the idea should be tossed on the backburner.

“Amplifying Weak Signals: A Framework for Foresight,” Mike Lee, CEO and Founder, Studio Industries, mike.lee@studioindustries.com

Additional Resources



With Our Compliments:

Global Food Forums, Inc. wishes to thank the speakers, attendees, sponsors and tabletop exhibitors for making the 2016 Protein Trends & Technologies Seminar a very successful event.

To download complimentary copies of presentations from the Seminar, including both Formulating with Proteins and Business Strategies, go to <http://www.globalfoodforums.com/2016-proteinseminar/store/> or scan the QR code, left.



IMR International is one of the leading industrial market research and consulting companies in food hydrocolloids. The company offers comprehensive studies on all things related to food hydrocolloids, as well as quarterly

and custom reports on all food thickeners, stabilizers and gelling agents. The IMR Hydrocolloid Conference 2017 will be held April 30-May 2, at the prestigious Westgate Hotel in the heart of downtown San Diego, Calif., USA. With the theme “Hydrocolloids - Safe, Sustainable & Suitable,” it will be a gathering of who’s who in the global hydrocolloids industry that includes suppliers, users, regulatory authorities, investors and consultants. For more information on IMR International and the company’s Spring 2017 conference, contact Dennis Seisun, 1-858-217 5024, DSeisun@hydrocolloid.com, <http://www.hydrocolloid.com/>



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NEW!

Global Food Forums®

2017 R&D Report: *Protein Ingredients*

*Product Formulators' Opinions on
Current and Future Protein Ingredient Use and Needs*

The new *Global Food Forums® 2017 R&D Report: Protein Ingredients* provides strategic analysis and actionable data on the difficult-to-obtain key drivers of protein ingredient selection.



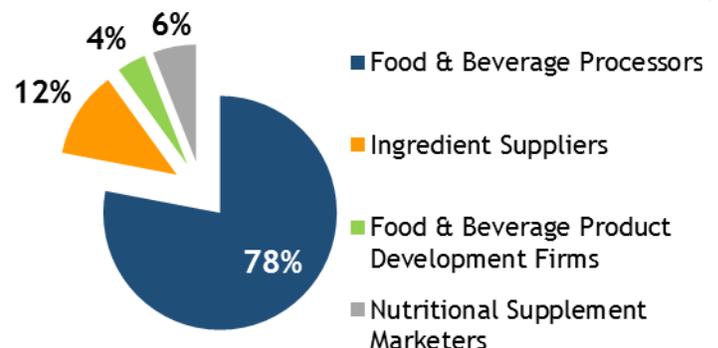
Conducted by NSM Research, Inc., this unique R&D Report will help guide corporate strategy and industry communications. Through increased understanding of customers' current and future needs as related to proteins, increased sales will result.

Examples of Topics:

- Which health trends will increase the most in importance?
- Which foods will be increasingly promoted for their protein content?
- What protein characteristics and functions are considered most important?
- How important will traceability, non-GMO, local sourcing, Paleo and other certifications be to business?
- How does R&D rank the value of various supplier services?
- What are R&D's leading reasons for blending multiple proteins in a product?

Survey Respondents:

200 Product Formulators from Four Industry Segments



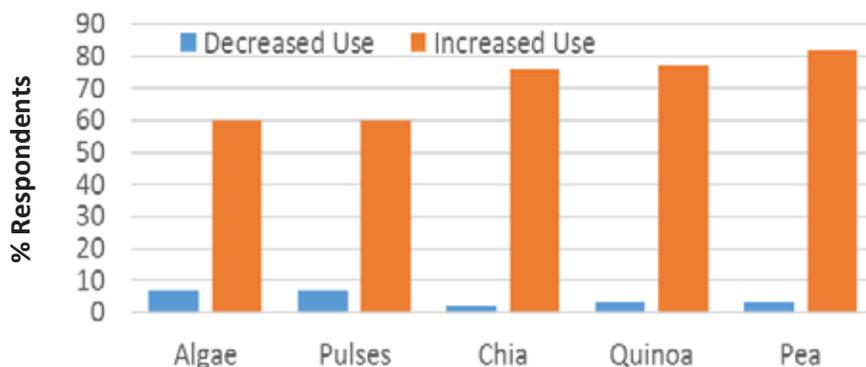
Source: *Global Food Forums® 2017 R&D Report: Protein Ingredients*

Deep Dive: Protein Types

Insights and opinions on proteins such as whey, egg, pea and soy by R&D and application food scientists who primarily work with those proteins will be delved into. For example, among formulators who primarily use whey proteins, "Taste" was ranked as the most important characteristic, while "Clean Label implications" and "Consumer popularity" the least important of the nine listed.



Protein Types Predicted to Increase/Decrease in Use (5 of over 25 listed)



Source: *Global Food Forums® 2017 R&D Report: Protein Ingredients*

Deep Dive: Applications

Survey results providing insights and opinions on current and future protein use by R&D at food processing companies and application food scientists will be segmented by work area such as Beverages and Grain-based Products.

For updates on content and expected launch data,
see www.globalfoodforums.com/PIR

Please reserve my digital copy of *Global Food Forums® 2017 R&D Report: Protein Ingredients* at the special pre-publication price. Delivery Fall 2016.

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Please submit your **2017 R&D Report: Protein Ingredients** reservation form to Peter@GlobalFoodForums.com or mail to: Global Food Forums, P.O. Box 1421, St. Charles, IL, 60174 or fax to 1-208-246-2242. Questions, contact **Peter Havens at 1-630-621-030**.

New 2017 R&D Report: Protein Ingredients

New market research conducted by NSM Research, Inc. surveys R&D and food application formulators on their attitudes, formulation issues and future trends, as related to their use of protein ingredients. This 60+ page *Global Food Forums® R&D Report: Protein Ingredients* will become available fall of 2016. Updates and more information on the report are available at: <http://goo.gl/WEJ4KQ> or contact Jenny Stricker at Jenny@GlobalFoodForums.com or +1.800.799.9671 ext. 1.

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