THE 2018 LIST
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Supplements in Fashion

There’s a certain kind of dietary supplement on the rise: the so-called “lifestyle” supplement. Unlike the supplements you’d traditionally purchase in health and wellness retailers like The Vitamin Shoppe, Walgreens, or even Amazon, lifestyle supplements are hawked by fashion-forward lifestyle brands or bloggers—think Gwyneth Paltrow’s Goop.

What do these brands do differently than traditional supplement brands? A few things. First, rather than attracting supplement customers from a ‘sick care’ point of view—e.g., by creating a supplement for cholesterol support or blood sugar management—these brands sell supplements around the goal of attaining a certain aspirational lifestyle. A beauty- and fashion-focused brand like Goop, for instance, might sell a nutricosmetic supplement that helps its readers keep their skin looking beautiful, dewy, and fresh. An athleisure wear brand, on the other hand, might sell supplements for joint health to support active-lifestyle customers in their fitness goals, such as marathon running.

Libby Rodney, chief strategy officer at market researcher Harris Insights & Analytics (Rochester, NY), says that lifestyle brands employ some very clever tools in order to sell supplements around the goal of attaining a certain aspirational lifestyle. A beauty- and fashion-focused brand like Goop, for instance, might sell a nutricosmetic supplement that helps its readers keep their skin looking beautiful, dewy, and fresh. An athleisure wear brand, on the other hand, might sell supplements for joint health to support active-lifestyle customers in their fitness goals, such as marathon running.

Lifestyle brands communicate heavily with their base, whether via an active company blog or “pop-up” shops or events where customers can learn about the brand and its products. Bloggers such as Kimberly Snyder, who now sells her own brand of probiotics, spend a lot of time educating and sharing information with their audience. Rodney points out, “They basically are giving away nonstop value to an audience about health and wellness, giving them tips and tricks and all kinds of information,” she says. “Then, once that trust is built, they’ll say, Hey, by the way, I didn’t see this product out in the marketplace, so I decided that I needed to create it just for you.”

Rodney points out that bloggers aren’t the only fashionable entities making inroads in the supplements space, either. Even traditional fashion retailers like Urban Outfitters are now selling dietary supplements. However, she notes, not every Urban Outfitters store is a ripe candidate for supplement selling. “In a regular store where there’s not really a pitch for it and it’s just sitting on the side of a shelf, it might not feel right,” she says. A store that hosts interactive events with customers and engages would be a better fit, she says. “It’s got to be a really cultivated experience.”

Building a lifestyle brand takes work, but the rewards are well worth it: if you’re a brand, imagine that, instead of having to compete against dozens of brands on the retail shelf, your customer—already incredibly loyal to your brand because of the groundwork you’ve laid and the trust you’ve created—reaches for your product from the start. It’s a heady proposition.

“It seems like there are a lot of opportunity gaps in this space if you really understand who your audience is—especially if your audience is a little more affluent,” as many lifestyle customers are, says Rodney. The typical lifestyle consumer generally has more disposable income to spend on health and wellness, whether it be Millennial urbanites with income to splurge on a pressed juice after a Soul Cycle class, or a Gwyneth Paltrow peer with the budget for a higher-priced Goop supplement. The trick, Rodney says, is to identify the needs of your lifestyle customer. “What are the things they want to fix about their appearance? What are the things they are stressed about? And is there a supplemental solution for those things?”

As health—and the pursuit of a healthy lifestyle—becomes the new status symbol, fashionable lifestyle brands will continue capturing new supplement customers. “If you look at what luxury looked like in the past, it was things like Ferraris and yachts and McMansions—all these things that were really unattainable to the mass consumer,” Rodney says. But now, through smaller splurges like acai bowls, pressed juices, and yes, even dietary supplements, more consumers can participate in the fashionable health and wellness movement. “I think it’s actually opening the aperture a little bit on how we define luxury and how it is more accessible,” she concludes. “We think there’s a big opportunity, white space, for supplement brands to be more in those lifestyle spaces.”

Jennifer Grebrow
Editor-in-Chief
Jiaherb recognizes that there is much uncertainty among manufacturers and consumers, about the integral quality of the botanical products they purchase. As a testament to our never-ending commitment to customer satisfaction, and to ease customer concerns about the integrity of our products, Jiaherb proudly introduces HerbaLink™.

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NEWS

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FDA Releases Guidance on Best Practices for Convening GRAS Panels

In a move that some critics of the GRAS system hail as much needed, FDA has issued a draft guidance outlining best practices for putting together an expert panel for evaluating whether or not a substance is Generally Recognized as SAFE (GRAS) for its intended use. The draft guidance is open for public comment until May 15, 2018.

In its draft guidance, FDA recommends best practices including identifying GRAS panel members with appropriate and balanced expertise; reducing the risk of bias or the appearance thereof by assessing potential manners for possible or even perceived conflicts of interest; and limiting the data and information provided to the panel to what is also available to the rest of the public.

The draft guidance also reminds interested parties that use of a GRAS panel does not necessarily guarantee that GRAS criteria have been met. It reiterates that for a substance to be GRAS under its intended use, that use must meet the same safety standard as for a food additive—that is, there must be reasonable certainty of no harm under the intended use conditions. Further, the substance’s use must meet the general recognition standard: the substance to be GRAS under its intended use conditions, that use must meet the same safety standard as for a food additive—that is, there must be reasonable certainty of no harm under the intended use conditions.

Supplement Line Launches with Microtag Technology

Product authentication company TruTag Technologies Inc. (Kapolei, HI) announced that its microtag on-dose technology solution has launched in The Daily Wellness Company’s (Honolulu) U.S. product range. The launch marks the first time that TruTag’s silica microtags are available in a finished product.

Michael Batholomeusz, CEO, TruTag, commented on the partnership in a press statement from the company: “We are very pleased that Daily Wellness selected TruTag’s on-dose product identity solution for their industry leading and growing natural product lines and to launch this program together in the United States.”

According to TruTag, its micro particle-based pure silica, which the company calls TruTags, enable supplement makers to “authenticate, identify, and trace solid oral dosage form (SODF) tablets and capsules along the entire length of a supply chain.” TruTags, said the company, are edible, covert, and are pure silica, an excipient that is considered generally recognized as safe.

TruTags “act as invisible on dose bar codes for capsules and tablets,” which allows manufacturers to obtain product and product origin information from the pill itself, rather than from external packaging, said the company: “This powerful security diagnostic tool enables brand owners to counteract product diversion, identify unauthorized grey markets, and find other distribution vulnerabilities.”

In the press release, Denny Kwock, CEO, The Daily Wellness Company, explained that TruTag’s authentication technology is a way for the company to show its “continued commitment to product quality and integrity.” He added that TruTag’s on-dose identity solution will allow us to access detailed information about our products including manufacturing origin without the need or reliance on packaging or lab results.

Daily Wellness also noted that, following the U.S. launch of the TruTag identity solution, it plans to implement the technology across other products as it expands its distribution internationally, particularly in the Asia-Pacific region. The TruTag solution, it said, will also be integrated into its new Physician’s Formula line.

InvaPharm Opens “Smart” Manufacturing Facility for Cosmetics, Dietary Supplements

InvaPharm, Inc. (Ontario, CA) announced the opening of its new manufacturing facility for pharmaceutical-grade dietary supplements and cosmetic products. According to InvaPharm, the Southern California facility was built from the ground up with a focus on quality and traceability. Some key features of the new facility include its efficient “smart” design, clean rooms throughout the facility and cross-contamination prevention controls.

Of the facility’s design, Manu Patel, founder, CEO, InvaPharm, stated: “We had the advantage of starting a facility from the ground up and [employing] the latest technological advantages. The vision for InvaPharm’s facility revolved around pharmaceutical manufacturing standards and that’s exactly what we’ve accomplished.”

Kalpesh Bodar, vice president of operations, InvaPharm, agreed, telling Nutritional Outlook that the facility’s “smart” design is based on time and motion studies “to ensure efficient manufacturing workflow from receiving to finished product packaging to shipping.” He added that the design accommodates one-directional-flow of operations. “This smart-space design...enables the company to maximize speed and efficiency, which results in faster production,” he added.

Additional measures have likewise been taken to ensure product quality, noted Jim Ayres, vice president of new business development, InvaPharm. “From pressurized isolation chambers, seamless walls and windows, metal pharmaceutical walls and ceiling, no 90-degree angles floor to ceiling, humidity, and air flow controls...it’s just unprecedented in this industry and frankly, long overdue.”
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2018 Trend: From Snacks to Mini-Meals

Goodbye, small bite. Hello, mini-meal.

BY INNOVA MARKET INSIGHTS

A snacking evolution is taking place. Snacks are not only becoming healthier, they are also becoming more wholesome, satisfying, hearty, and nutritious, blurring the boundaries between snacks and meals. Opportunities are emerging to tackle cravings while catering to wholesomeness and indulgence. Meanwhile, small portions will extend further, riding the snackification trend. Innova Market Insights has listed “From snacks to mini meals” as its number 8 trend for 2018.

Innova Market Insights research notes how the nutritional content of snack foods is changing in terms of protein content, fiber, vitamins, and minerals. The ongoing strength of the high protein trend, which is about satiation, is also illustrative of this shift. In terms of a healthier reformulation in new product development, in 2017 YTD, 4% of the snack launches tracked globally feature a “low fat” claim and 6% of total snacks carry a “no trans fats” claim. At the same time, the percentage share of sugar claims (low sugar/no added sugar/sugar free) in new snack launches grew from 2% in 2012 to almost 4% today.

Fruit Snack Attack

Highly dramatic compound aggregate growth occurred in “low sugar” (+48%), “sugar free” (+35%), and “no added sugar” (+29%) over this period, which was accelerated due to the rise in natural fruit snacks. The focus appears to be on “no nonsense” clean label snacking, particularly with fruit options featuring claims such as “just fruit” (e.g., Just Fruit Bars from ZEGO Snacks [San Francisco]), “contains no monkey business” (e.g., Crunchy Coconut Bites Chia Seed from Ape Snacks [London]), and “with no added nonsense” (e.g., Real Fruit Yo Yos from Bear [Charlotte, NC]).

Savory Soars

Salty/savory snacks continue to lead globally in terms of launch activity, with around 35% of the total recorded in the 12 months to the end of May 2017. This puts it ahead of snack nuts & seeds (which was just under 29%) and fruit-based snacks (which has just under 18%). The other three sub-categories are much smaller, with meat snacks and finger foods/hors d’oeuvres just under 7% each and popcorn at just under 5%.

Ongoing innovation in the salty snacks market has resulted in a growing range of ingredients and flavors being used, often in increasingly complex formulations. While potatoes, corn, wheat, and soy continue to be key ingredients in snack foods, an increasing range of basic raw materials are now appearing as alternatives. This is not only to add variety, but also to give a healthier image, or even to allow gluten-free claims. Launches have included bread crisps, pita chips, plantain chips, cassava chips and sweet potato chips, as well as products featuring a whole range of non-traditional ingredients in the form of different vegetables, fruits, seeds, and pulses.

This trend is clearly illustrated in the launch activity from better-for-you snack brand Boulder Canyon, part of Inventures Foods (Phoenix, AZ). At the very end of 2016, the company extended its U.S. range with several new-style snack crisps made with a range of wholesome ingredients, including vegetables and so-called ancient grains. The introductions included Lentil, Carrot, Quinoa Crisps; Snap Pea Crisps; and Ancient Grains Crisps, all baked not fried, gluten-free, trans-fat-free, non-GMO and with zero cholesterol and 130 calories or less per serving.

An even more unusual initiative has been the launch of Tortilla-Style Cricket Chips from Chirps Chips (San Francisco) made with a high-protein powder of dried and milled crickets, as well as GMO-free corn. The chips are also marketed as gluten-free and all-natural and come in Cheddar, Sea Salt, and BBQ flavors.

A Growing Role for Nuts

Nuts are an increasingly popular snacking option and taking a rising share of launch activity in the global snacks category. Factors driving growth include rising publicity about their health attributes, the greater availability of different types and mixes, and technological advances that have allowed the development of new coatings, flavors systems, and packaging formats.

The nutritional properties of nuts continue to be promoted, with nearly 40% of global snack nut & seed launches recorded by Innova Market Insights in the 12 months to the end of May 2017, using a health claim...
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of some kind. This figure rises to over 60% in the United States.

A wide variety of health claims are used for launches, with the current interest in clean labeling and “free from” clearly evident in product activity. The leading claim overall was allergy free, used for over 11% of global launches, ahead of “gluten free” with 10.6%. If “natural” and “no additives/preservatives” claims are combined to indicate interest in clean labeling, however, either one or both were used for a leading 14% of launches. This rises to 23% if “organic” claims are also included. Other key claims are “high in/source of fiber” on just over 10% and “high in/source of protein” on 9.5%, while there is also significant, but lower, interest in “low cholesterol,” “low sodium” and “no trans fats” claims.

Rising interest in vegan diets has also driven activity in nuts and nut mixes, as well as in the snacks category overall. The use of vegan-friendly labeling has risen markedly in recent years in the food and drinks market as a whole. In the snacks category, many products have always been naturally vegan or have managed to use vegan claims with relatively little reformulation or repositioning.

Over 7% of global snack nut & seed launches used a vegan positioning in the 12 months to the end of May 2017, rising to 12% in Western Europe, nearly 16% in the United States, and to an astonishing 26% in the UK, which has seen particularly high levels of interest. Alongside vegan-friendly positionings, many products are also able to appeal to other fashion trends of the moment, including raw and paleo diets.

### Popping Up in Growth

Popcorn is one of the smaller snacks subcategories, but has seen consistent growth in recent years, mainly as a result of the promotion of ready-to-eat popcorn as a convenient, tasty, and better-for-you snack option for in-home consumption (particularly sharing social occasions); for on-the-go snacking; and at cinemas and sporting events.

There was a double-digit rise in global launch numbers recorded by Innova Market Insights in the 12 months to the end of May 2017, taking the sub-category’s share of snacks introductions up to 4.7%. In the United States, the traditional home of both popcorn and snacking, popcorn had an even stronger role, with its share of launches up from 8.8% to 9.6% over a 12-month period. The United States accounted for a quarter of global launches, just
behind Europe, despite the large number of countries covered in that region.

Double-digit value growth in 2016 took sales to nearly US$1.3 billion through multiple retailers alone (IRI data). As the market has developed, traditional popcorn flavors such as cheese, butter, and caramel are continuing to be popular. But, there is also a definite move to more unique and bold options, featuring stronger cheeses, such as Parmesan and spicier components such as jalapeno and sriracha, as well as more sweet and savory combinations of all kinds.

Other innovation areas include more indulgent options, such as S’mores popcorn from The Little Kernel (Manalapan, NJ) and the Zebra range from Popcornopolis (Vernon, CA), both introduced in the first quarter of 2017. Popcorn is also being combined with other ingredients, as in Crunch ‘n Munch Caramel Popcorn with Peanuts and Butter Toffee Popcorn with Peanuts from Conagra (Chicago).

A new slant is also being developed by Takaokaya USA, Inc. (Vernon, CA), with its T-Pops Tokyo Style Popcorn in Nori Toasted Seaweed, Matcha Green Tea and Curry variants, while Pop IQ from ANE (Norwood, MA) has moved into the popping of other grains, with its range of organic, non-GMO, domestically-produced air-popped sorghum grains, featuring a “smart snack” superfood positioning. Four flavors—Kettle, Tuscany, Sea Salt & Pepper and Cheddar—are all packaged in stand-up pouches.

An Innovative Playing Field

As the snacking phenomenon drives ever onward into the core of our daily lives and as the definition of snacking has continued to broaden, it seems clear that high levels of new product and promotional activity are continuing to help drive sales in an increasingly crowded and competitive marketplace.

While taste and availability remain key to the market, there is also a widespread focus on better-for-you options. However, these options do tend to fare best when tied in with other key trends, including premium and super-premium products, often with unusual flavors and ingredients; the development of existing brands; the use of new ingredients, formats and packaging; and the targeting of new usage occasions and need states.

The traditional snacking sector is on the wane. Innovators are positioning creative snack products as mini-meals that serve as the future of snacking innovation. A counter revolution in snacking is taking place, whereby alternative ingredients are being used to help reformulation efforts.

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Ingredients to Watch

THE 2018 LIST

From bee propolis to probiotics, keep these ingredients on your radar in 2018.

BY KIMBERLY J. DECKER AND JENNIFER PRINCE, ASSOCIATE EDITOR

Nutritional Outlook thanks SPINS (Chicago) for sharing its market research data and insights for this story.

Stevia
From high-end eateries to local coffee shops, green packets of stevia are increasingly making an appearance alongside turbinado sugar and honey as a natural way to sweeten beverages without calories.

Customers have clearly embraced stevia. Since receiving approval as a commercial ingredient in 2008, Faith Son, vice president of marketing and innovation, PureCircle (Chicago), says stevia has enjoyed "tremendous growth." In the last five years, Mintel data show that the number of products containing stevia has multiplied at rate of 48%, with nearly 3,000 new launches year-to-date, Son says, adding, "We’ve seen increases in stevia use across all regions globally. And stevia's been incorporated into most applications where you'd traditionally find sugar."

This growth is pretty amazing in and of itself, and is even more impressive when you recall stevia at its start.

Road to success. Says Andy Ohmes, global director, high-intensity sweeteners, Cargill (Minneapolis), "It's important to recognize how far we've come with stevia." His company worked with the sweetener in the early days when, "despite its popularity, there were limitations," particularly vis-à-vis comparisons of the sweetener to the sugar it aimed to replace. "But," maintains Ohmes, "we knew advances were possible."

Stevia is composed of several molecules; researchers have identified approximately 40 so far, and at least 10 of them are the steviol glycosides like Rebaudiosides A and D, Steviol and Rubusoside responsible for stevia's taste and flavor. "Each molecule reacts differently in formulations and has a different taste profile," explained Maria Teresa Scardigli, executive director of the International Stevia Council (ISC, Brussels, Belgium) in a recent interview. "And when formulators began using first-generation stevia sweeteners weighted toward Reb A and Stevioside, they had to contend with bitter and metallic off-notes—not to mention a lingering taste."

"Today, suppliers have addressed this problem by creating steviol glycoside blends that are less dependent on Reb A and Stevioside," Scardigli said. "Suppliers now have a much better understanding of the different glycosides, how they work together, and their diverse sweetness profiles."

This understanding has only emerged within the past several years, she notes, and it has made today's stevia blends "completely different products" from what was available a decade ago. "Next-generation Steviol glycoside blends have been able to overcome several challenges faced by food and beverage manufacturers," she stated. "Therefore, the taste is really more like sugar."

State of the stevia art—and science. That achievement owes itself partly to improvements in the quality of the stevia plant. As Scardigli stated, "You need a high-quality stevia leaf to produce a high-quality extract that tastes good." So, sweetener producers have been working directly with growers "to use normal plant breeding techniques to ensure that the leaves have larger quantities of certain steviol glycosides," she stated.

For PureCircle, Son says, "Everything comes back to using better varieties of stevia plants." The company's proprietary stevia variety (StarLeaf) has 20 times more sugar-like content than conventional leaf varieties, she says, allowing for more significant sugar reduction even with improved taste. "Combinations of different stevia molecules can also provide optimal taste performance compared to single-ingredient solutions," she adds.
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Ingredients to Watch


The number of products containing stevia has multiplied at rate of 48% in the past five years, according to Mintel.

For Cargill’s part, Ohmes notes that after spending “more than 150,000 hours studying the stevia plant’s many steviol glycosides,” company scientists incorporated what they learned first into a branded ingredient (ViaTech)—which he says effectively increased the rate of successful sugar replacement from 30% to 70%—and then into a newer product (EverSweet) set to launch in 2018.

Is it natural? To create its new sweetener with a faster sweetness onset and no bitterness, Cargill homed in Reb D and Reb M, “which offer a heightened sweetness and taste similar to real sugar,” Ohmes says. Unfortunately, those two glycosides occur in the stevia leaf only in trace amounts of less than 1%. And because the land and water resources necessary to produce commercially viable quantities of Reb D and Reb M from stevia leaves were “staggering,” he continues, fermentation was used to produce its newer launch.

But as a product of fermentation and not an extract from the stevia leaf itself, will it qualify as “natural” with label-reading consumers? Proponents believe consumers will likely respond positively to a fermentative process that not only yields a more sugar-like sweetener, but also has a more sustainable pedigree than some agriculturally produced stevia options.

Wider horizons. As if that weren’t enough, Son notes that PureCircle’s scientists are peering beyond stevia’s utility as a sweetener to better understand how its other chemical constituents might benefit consumers and be leveraged as novel ingredients.

To wit, “Once PureCircle determined it could extract a meaningful amount of antioxidant content found in the stevia leaf”—primarily chlorogenic acid, the antioxidant associated with green coffee bean extract—“we knew our customers would find additional value and a functional benefit from this ingredient,” Son says.

Consumers’ desire for such benefits has driven an increase in labels trumpeting antioxidant claims of more than 18% over the past five years, per the Mintel GNPD, she says And as the company continues “working through the regulatory approvals process,” it aims to bring its stevia antioxidant product to market sometime in 2018.

Caffeine

An entire cottage industry has sprung up dedicated to selling “Death Before Decaf” merchandise: mugs, bumper stickers, socks, hoodies, aprons—there’s even a mystery novel by the same name. All of which goes to show that the public has plenty of love for a bitter alkaloid that, though naturally present in many plants, was once accused of exacerbating everything from heart disease and cancer to osteoporosis and addiction.

SPINS data suggests caffeine is the number two weight-loss ingredient, with $92,228,186 in current dollars among U.S. conventional multi-outlet stores (SPINScan Conventional Multi-Outlet [powered by IRI], 52 weeks ending November 5, 2017). Caffeine took the number six spot in the energy support area for these store types as well.

And if caffeine now finds itself in people’s good graces, it’s “for the simple reason that it works,” says Brian Zapp, director of marketing, Applied Food Sciences Inc. (AFS; Austin, TX). “There are few functional offerings that provide the near-immediate efficacious result that caffeine does for the body.” Detox, relaxation, antioxidants, weight loss: “All have incremental impacts that are minute and difficult to notice,” he says. “Yet 125 mg of caffeine will work within minutes depending on how you deliver it in the body.”

Good for body and brain. The work that caffeine does is good for both body and brain. Says Isabel Gomez, marketing manager, Lipofoods, SLU (Barcelona, Spain), “Evidence suggests that safe levels of caffeine consumption—a maximum intake of 400 mg per day—can bring health benefits.”

For example, scientific literature describes its role in enhancing physical performance, improving team sports activity and reducing fatigue, Gomez says. And though precisely how it potentiates athletes’ performance “isn’t completely understood,” she notes, “experimental studies have shown that it can delay the depletion of muscle glycogen and encourage working muscles to use fat as a fuel by mobilizing fat stores.”

There’s more. “Caffeine has also been shown to have a significant effect on cognitive parameters, such as concentration and alertness,” Gomez continues, noting the it has rightly earned a place in many specialized sports nutrition and energy products as well as other supplements.

Caffeine, naturally. But experts agree that not all caffeine is created equal. According to a 2016 Mintel report on energy launch growth, one in four U.S. consumers would prefer drinking energy beverages or shots made with all-natural ingredients, Zapp notes. “Additionally, 30% are now, at least in part, consuming natural energy drinks,” he states.

Reflecting on the bad rap that has dogged caffeine for so long, Zapp observes, “It’s funny, because while some consumers are suspicious of caffeine, they tend not to be overly wary about coffee or especially tea—both caffeinated plants. So perhaps it’s not the compound in and of itself but rather the way it’s presented that causes skepticism.”

For this reason, he has witnessed manufacturers become “more intentional” in how they position their products’ caffeine content. “We have several organic offerings that naturally contain caffeine—sourced from green tea extract, green coffee extract, or...
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guayusa extract—that have proven important because they’re standardized at caffeine levels low enough in concentration that manufacturers can label the ingredient a botanical extract on their ingredient declarations.”

Guayusa, in particular, fits this “natural” description, putting it on Zapp’s list of “the most exciting new ingredients in energy.” The caffeinated leaf of a holly species grown in the upper Amazon and a cousin to yerba mate, guayusa stands apart thanks to a polyphenolic profile that includes chlorogenic acid—the antioxidants in green coffee—and the catechin antioxidants common to green tea. Preliminary research on AFSS’s branded organic guayusa extract (AMATEA) indicates that it may help regulate the flight-or-fight hormone epinephrine.

All in moderation. Gomez agrees, caffeine from “natural” sources “is expected to continue being one of the central ingredients used in almost all energy products, as it’s one of the most studied and well known central nervous system stimulants.”

But even when consuming “natural” caffeine, moderation remains key. Ironically, the rapid absorption that makes caffeine so immediately effective means that sensitive consumers can get a caffeine “hit” that fluctuates more than they may like. Thus, says Gomez, “there’s currently a need for caffeinated products that can continuously provide the desired benefits associated with caffeine without the unwanted effects.” His company’s answer are microcapsules (NEWCAFF) that slowly release caffeine to prolong caffeine’s effects over four hours.

Building synergies. As if that weren’t good news enough for caffeine, Hector L. Lopez, MD, CSCS, FAAPMR, FISSN, cofounder, Supplement Safety Solutions, LLC (Bedford, MA), and chief science liaison for Compound Solutions, Inc. (Carlsbad, CA), calls attention to the results of a human clinical trial published in the Journal of Caffeine Research in July 2017 showing that the pairing of caffeine with theacrine—a purine alkaloid found in cupuacu (Theobroma grandiflorum), among other plants—can enhance the latter’s bioavailability and potency with no effect on subjects’ heart rate or blood pressure.

“Caffeine has been a longstanding staple ingredient for formulators from energy drinks and pre-workouts to ‘nootropics’ and weight-management formulas,” Lopez says. “But caffeine hasn’t always had a definitive synergistic ingredient to partner with.” The new trial, which used Compound Solutions’ theacrine ingredient (TeaCrine), “demonstrates real synergies where caffeine can elevate TeaCrine’s bioavailability, intensity and duration of energy focus, mood and motivation response.”

Theacrine promises to continue making a major splash in the dietary supplement and mass beverage-functional food channels as a ‘caffeine companion,’” Lopez says. Given caffeine’s rising star, that’s hardly a bad thing to be.

Curcumin
A few years ago, most of us had never heard of “golden milk.” Now, this fortifying mixture of warm milk, turmeric, and aromatic spices is a staple of smart cafés and fresh cases, where it’s been “creating a buzz in the healthy drinks arena,” a Mintel blog post notes on the topic from June 13, 2017, states.

One key feature drawing consumers to golden milk is in large measure what established the drink in India’s Ayurvedic healing tradition centuries ago—namely, that the turmeric (Curcuma longa) responsible for its namesake hue is rife with curcumin, a polyphenol “witnessing a radical shift from being just a culinary spice, pigment, or Indian folk medicine to becoming an agent with therapeutic relevance in managing several health conditions,” says Shaheen Majeed, president worldwide, Sabinsa (East Windsor, NJ).

Those properties have kept curcumin trending for several years running. And if you were expecting it to run its course, think again. “Curcumin is not done yet,” Majeed says. “It still has traction.”

Nutraceutical rock star. As far as functional ingredients go, curcumin has attained “mass-market rock-star status,” Majeed says, noting that Google recognized it as one of the search engine’s most-searched terms in 2016—“signifying growing consumer interest in its benefits,” he adds.

And indeed, the value of the curcumin market surpassed $46.6 million globally in 2016, with expectations for it to top $110.5 million by 2024, according to a Global Market Insights analysis.

Here in the United States, 2017 SPINS data puts turmeric (of which curcumin is the key component) in the top 10 of joint ingredients across all outlets. Among conventional multi-outlet stores, for instance, 2017 sales of turmeric were $4,891,239, a 31.0% year-over-year increase (SPINSscan Conventional Multi-Outlet, powered by IRI Worldwide, 52 weeks ending November 5, 2017). Among U.S. natural supermarkets, turmeric had 30.6% growth in the joint health category from 2016 to 2017, bringing total sales to $3,339,944 (SPINSscan Natural, 52 weeks ending November 5, 2017).

But, can any single antioxidant have this much staying power? Staying power, or hype? Majeed certainly thinks so. For one, “increasing consumer preference for natural ingredients” has endeared curcumin with the public, he says. “In addition, increasing demand for health-and-wellness supplements against the backdrop of a growing geriatric population is also resulting in improved curcumin demand.” But perhaps more significant is the persistent emergence of health associations uncovered in ongoing research. “Proven health benefits,” Majeed notes, “should continue to be the driving force of global curcumin growth.”

Sound science. And it’s easy to find the evidence of those benefits. A basic PubMed search with the keyword ‘curcumin’ gets you more than 11,000 scientific publications, including clinical studies,” Majeed says, which testifies to the compound’s “compelling health-and-wellness properties of interest to researchers and consumers alike.”

Strong science links curcumin—and its major chemical actives, curcuminoids—to brain and cognitive health, weight management, heart health, digestive health, inflammation support, joint health, bone density, metabolic health, and more. Majeed says, “This diversity will expand curcumin’s use to new consumers in the future,” he says.

Pharmaceutical firms and their research teams increasingly express interest in curcumin. In 2016, pharmaceutical applications accounted for more than 50% of the total
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SPINS data suggest plant protein is a top-selling ingredient across all channels.

industry demand, fueled by extensive research demonstrating efficacy against various lifestyle-related conditions," Majeed says.

It all adds up to "an excellent case study in the role that good research can play in making an herb successful in the marketplace," he continues.

Another area of growth for curcumin may be in functional foods such as beverages—especially hot ones, like golden milk. "In Japan," Majeed notes, "turmeric-derived beverages are popular, and we expect that to expand to more regions." Already he’s noticed turmeric lattes available in "hip cafes in San Francisco and New York," as well as flavored curcumin milkshakes. Other potential applications he’s watching include sports nutrition products, cosmetics and supplements that combine curcumin with "synergistic" ingredients, like omega-3s and piperine.

**Heading off the headwinds.** But the potential for turbulence exists. The ingredient’s success and rapid growth “make it susceptible to exploitation—particularly adulteration,” Majeed says. So in 2017, Sabinsa became the founding board member of the Global Curcumin Association, the mission of which is not only to increase awareness about the compound and its science-backed benefits, but also to “create needed transparency about product quality,” according to the association’s website.¹

Majeed believes it is imperative to advocate for curcumin best practices. “We can protect and preserve the integrity and future of the category by taking steps to reduce economically motivated adulteration with synthetic replacements masquerading as naturally derived,” Majeed says. He also expects the group to prepare a code of ethics and quality standards for the category and make sure that scientific attributions are correct. “These are the core objectives for the association, so look for these developments in 2018.”

**Plant Protein**

According to recently released Nielsen data representing retail sales across all outlets over the 52 weeks ending August 12, 2017, plant-based meat analogs generated $565 million in revenue at a growth rate of 7.6%, while plant-based cheese products brought in $90 million at 20% growth and plant-based milk $1.5 billion at 3.1% growth.

“Together, this is more than $2 billion in retail outlet annual revenue from products containing plant proteins,” says David Welch, PhD, director of science and technology at the Good Food Institute (GFI; Washington, DC), which worked with Nielsen to develop the data. “With more innovative plant-based foods coming to market,” he says, “this growth is certain to continue.”

Sales figures are strong in the dietary supplements category as well. According to 2017 data from SPINS, plant protein is a top-selling ingredient across all channels. It’s the second-most popular ingredient in the natural channel with $76,142,530 in sales and third in the specialty gourmet channel with $5,294,717 in sales (SPINSScan Natural, SPINSScan Specialty Gourmet, 52 weeks ending November 5, 2017). Energy support and weight loss are key functional areas for plant protein, according to SPINS.

**Huge shift.** “There’s definitely a huge shift that’s happening,” says Michele Simon, executive director, Plant Based Food Association (San Francisco). “The shift is coming from younger people who are more aware of their food choices and reject the conventional big-food way of doing things.”

In response, major manufacturers like Campbell’s Soup and Nestlé are acquiring smaller companies that treat promoting plant-based proteins in their food products as their mission. “Clearly, Simon says, “the conventional players see the writing on the wall and they want to be part of it.”

But as “big food” and all who consume it turn more toward plants, their interest raises questions as to whether sufficient plant-protein options will emerge to meet demand. And at least from a species-diversity standpoint, existing sources for plant protein ingredients are surprisingly limited. “Today’s global food supply depends on 150 plant species,” Welch notes. “Yet the vast majority of commercially available plant-based protein ingredients comes from only 2% of these species.”

In fact, more than 60% of the plant protein flours, concentrates, and isolates that global ingredient suppliers sell are soy-derived, he says. But the upside, he continues, is that “a significant pool of potential plant protein sources is still available for exploration—and this doesn’t even take into account the almost 250,000 additional plant species not used in agriculture today.”

Pulse-based options are perhaps the poster proteins for what’s possible, and pea proteins offer proof. Though they constitute less than 10% of the offerings in the current database of plant proteins, they’ve seen “an explosion in growth” since their appearance in recently launched products from Beyond...
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Meat and Ripple, Welch says, "This growth has generated considerable interest in novel pea strains and other pulse proteins such as those from fava bean, lupin, and garbanzo."

It's a jungle out there. But pulse proteins are hardly the only up-and-comers. Welch cites a Lux Research report indicating that proteins from fungi and algae, "which are less resource-intensive than terrestrial plants," will emerge in the next few years.

Simon points to Upton's Naturals use of the tropical jackfruit in its shredded meat product, and she expresses amazement at the variety of plant-based milks crowding supermarket shelves. "There's no end to the types of ingredients that can be turned into milk," she says, including flaxseeds, macadamia nuts, and even the Oceanic pili nut. "There's just so much creativity. You see the same thing in the yogurt category."

But, it's inevitable that quite a few plant-based products across categories won't make it past the novelty stage. "What I worry about is the disconnect between what we see at the expos and what shows up in the stores," Simon says. "Obviously, it's a really competitive marketplace, and so no, they're not all going to survive."

After all, enormous acreage is already planted to the commodity soy and wheat that dominate plant-based proteins—with all the economies of scale that implies. Further, centuries of breeding followed by decades of hybridization and engineering have "endowed these plants with remarkable yields and robustness," Welch adds. Besides, soy and wheat proteins have proven to work in plant-based meat—all of which makes them ideal for further optimization of traits that improve their suitability to such products. "As a result," Welch says, "proteins from other crops will have to show significant improvements in multiple attributes, including cost, taste, texture, and sustainability before they're widely adopted as ingredients in plant-based foods."

How long can this last? Even plant proteins' vaunted sustainability cred may not be as green as it seems. As Welch notes, "When we think about plant-protein sustainability, it's important to think about the entire production process, from the starting crop to the end product." Water needs, soil, climate suitability, and even the processing required to produce a protein ingredient must factor into the equation.

And because isolation and concentration cause "considerable energy losses," Welch says, "manufacturers are now investigating more efficient milling and processing techniques specifically optimized for plant-based meat and beverage manufacture. As a result, farmers will be able to grow more crops that provide proteins better suited to plant-based meats and beverages while requiring less water and energy."

Regardless, Simon adds, when you compare plant proteins' production to the animal-based agriculture it aspires to replace, the former always come out ahead. Ultimately, says Simon, "We want to make the economic case for why we need more agriculture to supply the plant-based foods industry."

Room to grow. Welch is optimistic about the future of plant-based proteins. He says, "I've been really excited by the methodical approaches of Beyond Meat, Impossible Foods, Hampton Creek, and others to create plant-based mimics of animal products."

Their R&D labs are fast at work analyzing the animal products they're trying to mimic, characterizing the components responsible for the taste, texture, aroma, mouthfeel, and other attributes consumers associate with them and identifying plant-based analogs. Says Welch, "I'm looking forward to more plant-based products that provide that type of sensory experience. I think we've just scratched the surface with the types of products that can be created with plant proteins."

Vitamin K2
Ask the average civilian to name the two most important bone health nutrients and they'll likely mention calcium and vitamin D. And for good reason. But perhaps the question would be better posed to solicit the three most important bone health nutrients—for neither calcium nor vitamin D would be very effective without help from vitamin K2 (menaquinone).

And as far as Eric Anderson, senior vice president of global marketing and business development, NattoPharma USA Inc. (Edison, NJ), is concerned, it's about time our industry fully reckon with that. "Manufacturers cannot ignore the growing body of evidence that K2 is required for the body to properly metabolize and use calcium," he maintains. "By adding K2 to products featuring calcium and vitamin D, manufacturers would make more effective bone-support products, while also helping consumers protect their cardiovascular health."

In fact, not only is vitamin K2 essential to shipping calcium into bones where it keeps them strong; it's also a key factor for keeping excess calcium out of arteries where its precipitation hastens their hardening and, eventually, cardiovascular disease. All of which is a convincing argument for paying more attention to vitamin K2 in 2018.

Depending on K. In the natural channel, 2017 sales of vitamin K were strong in the bone health category, according to SPINS (SPINS-scan Natural, 52 weeks ending November 5, 2017). Fifth behind calcium—magnesium, vitamin D, calcium, and fish oil, vitamin K was the fastest growing of the lot. Vitamin K sales spike 18.7% to $2,667,726. In the multi-outlet channel, vitamin K took the number 8 spot at $907,407 in sales for bone health, a 19.3% increase over last year's numbers (SPINS-scan Conventional, powered by IRI Worldwide, 52 weeks ending November 5, 2017). It's a wonder that vitamin K2 doesn't get even more attention. For while vitamin D and calcium "have already been recognized as strong bones' 'best friends,'" says Lorena Carboni, product support specialist, Gnosis S.p.A. (Desio, Italy), the highest incidence of osteoporotic fractures occurs in developed countries, where calcium intake is highest.

Osteoporotic fracture patients also often present with extensive arterial calcium plaques. Carboni continues, and "this simultaneous excess of calcium in one part of the body and lack in another—which may occur in spite of calcium supplementation—is known as the 'calcium paradox' and is due to low levels of vitamin K2."

So, what does vitamin K2 do for bones—and vessels—that neither vitamin D nor calcium can do alone? While vitamin D synthesizes proteins like osteocalcin (which binds calcium in the bones) and matrix GlA protein (MGP, which takes calcium out of soft tissues like blood vessels), full activation of these K-dependent proteins happens only following carboxylation courtesy of vitamin K2.

Just can't get enough. Alas, our modern Western diets don't give us the vitamin K2 we need—particularly not in the menaquinone-7 (MK-7) form that Carboni says optimizes carboxylation. Colonics bacteria can produce MK-7, among other menaquinones, but its
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bioavailability is poor. And unlike with other fat-soluble nutrients, the body doesn't store vitamin K2. The upshot: "Its deficiency, often subclinical in a large part of the population, is present in most healthy adults and children in the West," Carboni says.

This, again, suggests a need for more widespread supplementation, particularly as vitamin D intake rises—after all, the more we supplement with vitamin D, the more we need vitamin K2 to carboxylate all those K-dependent proteins that vitamin D makes. Thus, Carboni echoes Anderson in calling for calcium supplements to be formulated with vitamins D and K2 "for real benefits to bone and heart health."

**Shifting the focus.** Sufficient evidentiary firepower to shift focus onto vitamin K2 may emerge in the wake of a pair of grants that NattoPharma’s International Research Network, coordinated by the Cardiovascular Research Institute at Maastricht University (CARIM), received in 2017, as well as from two clinical trials published the same year.

The studies investigate MK-7 supplementation’s role in improving vascular calcification, with the first, published in June 2017, focusing on hemodialysis patients—a population recognized by the European medical community as vitamin K deficient. Researchers gave 50 such patients 360 µg of menaquinone-7 (MenaQ7) daily for four weeks and measured vascular calcification scores and levels of dp-ucMGP (dephosphorylated-uncarboxylated matrix Gla protein, or “inactive” MGP) as proxies for vitamin K2 status. Not only did they find that hemodialysis patients have "profound vitamin K deficiency as assessed by high dp-ucMGP plasma levels, which are significantly correlated with high aortic calcification scores and thus can be used as a noninvasive marker for vascular calcifications," Anderson says, but that daily supplementation with 360 µg of MK-7 decreased dp-ucMGP by 86% after four weeks.

The second study involved renal transplant patients—also known to be subclinically vitamin K deficient. After eight weeks of taking 360 µg of MK-7 daily, their arterial stiffness and 24-hour peripheral and central pressures significantly improved. Supplemental supplementation also improved vitamin K2 status, as manifested in lower dp-ucMGP concentrations. "We have more studies underway currently," Anderson adds. "Further, the medical community is also now sponsoring studies looking at K2 as a therapy in diseased populations as an alternative to drugs."

**Beyond bones and blood vessels.** Notes Carboni, "We know by now that some of the major benefits of consuming vitamin K2 include the improvement of bones and cardiovascular health, but what’s emerging is its role in an increasing number of age-associated diseases."

Researchers have lately described and classified other K-dependent proteins in different organs and tissues, including growth arrest specific gene 6 (Gas-6), transmembrane Gla proteins (TMG3 and TMG4), proline-rich Gla proteins (PRGP1 and PRGP2), Gla-rich protein (GRP), perioestin, and transhyretin. "In 2018, alongside a consolidation of the studies related to bone and cardiovascular health, we’ll see new studies on vitamin K2’s emerging role in inflammation, chronic kidney disease (CKD), immunity, and cancer," Carboni says.

And Anderson couldn’t be happier. "Vitamin K2 is the poster child for what’s right about nutrition: this is something found in food and correlated to bone and cardiovascular health; the nutrition industry has identified and standardized it; we’ve validated the efficacy in multiple human studies involving healthy subjects; and this has attracted attention from the medical community, who are now investigating it in drug studies," he says. "This is a huge win for the natural products industry."

**Probiotics**

After impressive 2016 sales landed probiotics a spot on last year’s list of ingredients to watch, it’s clear that probiotics continue to shine. SPINS tells *Nutritional Outlook* that in 2017, probiotic supplements were once again the number-one bestselling ingredient in both the natural and specialty gourmet channels, with 4.0% and 10.6% growth, respectively. In the mainstream multi-outlet channel, probiotics again came in at number two, with 3.7% growth (SPINSscan Natural, SPINSscan Specialty Gourmet, Convention- al Multi-Outlet [powered by IRI], 52 weeks ending November 5, 2017). Michael Bush, president, CEO, Ganeden (Cleveland), points to data from Global Market Insights indicating that the global market for probiotics is projected to exceed $64 billion by the year 2023. New probiotic products are launching daily, he says. It seems that probiotics’ popularity is, at this point, a given.

So, what’s behind this growth? Dan Lif- ton, president, proprietary branded ingredi- ents group, Maypro (Purchase, NY), says the probiotic category’s rapid growth is a perfect storm of consumer awareness about probiotics’ broad health potential and "how easy it is to make sure they’re getting enough pro- biotics via foods, beverages, and standalone supplements." Says Lifton: "Put all of these… concerns together…and you have a marketplace and a consumer base all pointing in one direction: to probiotics."

**Beyond digestion.** While probiotics’ gut-health benefits have been studied for decades, consumers are taking note of the mounting research that supports probiotics’ benefits beyond digestive health. A team from Elite One Source Nutritional Services (Missoula, MT)—Jennifer Schall, director of product engineering, Stan Bieniecki, product engineering formulation manager, Debra Tailfeathers, product engineering formulation, materials/vendor compliance, and Doug Leifer, director of client services—points to recently published studies showing probiotics’ potential not only to support the digestive system, but also to help "relieve stress, protect teeth, help reduce blood pressure, improve the appearance of the skin," and more.

SPINS data bolsters this viewpoint. While digestion has the biggest piece of the pie (with U.S. sales of $606,071,111 at U.S. conven- tional multi-outlet stores, for instance) among the most common health focus areas for probiotics, general health, cleanse and detox, urinary tract health, and energy sup- port round out the top five (SPINSscan Conven- tional Multi-Outlet [powered by IRI], 52 weeks ending November 5, 2017).

Missy Lowery, head of integrated markets, Capsugel, a Lonza Company (Morristown, NJ), tells *Nutritional Outlook* that niche markets also stand to win big by promoting probiotics’ other health benefits. For example, she says, "the active nutrition/sports nutrition market..."
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is learning about potential benefits of probiotics to possibly stave off respiratory infection, improve aerobic fitness, manage inflammation, and enhance amino acid uptake and absorption for strength gains. The healthy-aging market, meanwhile, is "showing interest in probiotics for skin health, oral health, immunity boosting, and respiratory health."

What shoppers want. To meet the demands of new or niche markets while satisfying consumers who have come to expect options, manufacturers are exploring alternative delivery systems and honing existing formats. A few key criteria emerge: convenience, stability, and efficacy. Says Lifton: "Consumers don't want horse pills and crave versatility in their probiotics: meaning ease of use and in a variety of forms: in functional foods and beverages, soft gels and more."

That consumers are keen on convenience may come as no surprise. Bush says that consumers are "looking for delivery options that easily fit into their daily lifestyle and meet dietary preferences…they want probiotics in products that they’re already consuming daily—add food and beverages to microencapsulation systems, gels and more."

and in a variety of forms: in functional foods and beverages, soft gels and more."

That consumers are keen on convenience may come as no surprise. Bush says that consumers are "looking for delivery options that easily fit into their daily lifestyle and meet dietary preferences…they want probiotics in products that they’re already consuming daily—and in a range of choices. Maybe it’s a coffee one day or a snack the next—they’re looking for variety and an array of probiotic options to choose from."

From fortified food and beverages to microencapsulated probiotic ingredients, capsules, gummies, and more, consumers certainly have options.

New technologies on the rise. Incorporating probiotics into novel delivery systems, however, is easier said than done. Many of the companies Nutritional Outlook spoke with for this story note that stability is likely to remain a key concern for manufacturers going into 2018. During the tableting process, Lowery says, pressure and heat can compromise a probiotics’ stability. In addition, she says, transportation, length of time in storage, exposure to moisture, and changes in temperature can also wreak

<table>
<thead>
<tr>
<th>Multi-Outlet Channel (United States) 25 Bestselling Ingredients across All Health Conditions</th>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein - Animal &amp; Plant Combo</td>
<td>$1,384,358,781</td>
<td>$1,464,751,607</td>
<td>-5.5%</td>
<td></td>
</tr>
<tr>
<td>Probiotic Supplement</td>
<td>$659,154,398</td>
<td>$635,716,724</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td>Protein - Animal (Multi)</td>
<td>$517,523,573</td>
<td>$474,516,006</td>
<td>20.4%</td>
<td></td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$352,811,551</td>
<td>$363,315,062</td>
<td>-2.9%</td>
<td></td>
</tr>
<tr>
<td>Protein - Animal (General)</td>
<td>$334,077,538</td>
<td>$330,789,307</td>
<td>1.0%</td>
<td></td>
</tr>
<tr>
<td>Multivitamin (Women)</td>
<td>$331,126,702</td>
<td>$299,946,594</td>
<td>10.4%</td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td>$281,889,079</td>
<td>$278,766,183</td>
<td>1.1%</td>
<td></td>
</tr>
<tr>
<td>Multivitamin (Adult)</td>
<td>$271,297,179</td>
<td>$232,127,562</td>
<td>-16.0%</td>
<td></td>
</tr>
<tr>
<td>Protein - Animal (Whey)</td>
<td>$241,054,190</td>
<td>$273,453,276</td>
<td>-11.8%</td>
<td></td>
</tr>
<tr>
<td>Taurine</td>
<td>$235,652,049</td>
<td>$247,025,839</td>
<td>-4.6%</td>
<td></td>
</tr>
<tr>
<td>Melatonin</td>
<td>$223,458,962</td>
<td>$210,435,162</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C (Not Ester-C)</td>
<td>$217,320,199</td>
<td>$201,386,657</td>
<td>7.9%</td>
<td></td>
</tr>
<tr>
<td>Fish Oil Concentrate</td>
<td>$215,093,954</td>
<td>$245,676,560</td>
<td>-12.4%</td>
<td></td>
</tr>
<tr>
<td>Multivitamin (Senior)</td>
<td>$201,802,473</td>
<td>$215,822,400</td>
<td>-6.5%</td>
<td></td>
</tr>
<tr>
<td>Multivitamin (Children)</td>
<td>$183,568,736</td>
<td>$198,520,235</td>
<td>-7.5%</td>
<td></td>
</tr>
<tr>
<td>Psyllium</td>
<td>$174,827,104</td>
<td>$184,365,832</td>
<td>-5.2%</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>$170,941,003</td>
<td>$185,311,723</td>
<td>-7.8%</td>
<td></td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$152,879,425</td>
<td>$153,372,381</td>
<td>-0.3%</td>
<td></td>
</tr>
<tr>
<td>Fiber (Other)</td>
<td>$150,514,214</td>
<td>$160,309,572</td>
<td>-6.1%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C (Ester-C Only)</td>
<td>$142,798,721</td>
<td>$138,880,277</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td>Glucosamine–Chondroitin Combo</td>
<td>$140,902,207</td>
<td>$154,080,964</td>
<td>-8.6%</td>
<td></td>
</tr>
<tr>
<td>Caffeine</td>
<td>$140,784,538</td>
<td>$135,509,623</td>
<td>3.9%</td>
<td></td>
</tr>
<tr>
<td>Co-Enzyme Q10</td>
<td>$140,855,316</td>
<td>$154,744,479</td>
<td>-9.2%</td>
<td></td>
</tr>
<tr>
<td>Horehound</td>
<td>$135,788,398</td>
<td>$122,962,866</td>
<td>10.4%</td>
<td></td>
</tr>
<tr>
<td>Multivitamin (Men)</td>
<td>$133,030,672</td>
<td>$129,580,716</td>
<td>2.7%</td>
<td></td>
</tr>
</tbody>
</table>

Data: Dietary supplements (Vitamins & Supplements and Herbs & Homeopathics) Source: SPINSscan Conventional, powered by IRI Worldwide

Time period: 52 weeks ending 11/5/17
Channel: U.S. conventional multi-outlet, comprising grocery, drug, Wal-Mart, mass, dollar, military, and club stores
Ingredients from
South America and Beyond

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- We Offer Popular Ingredients Such As Blueberry, Beetroot, Guayusa, Huanarro, & 100s More

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harvest on a probiotic before it finds its way into a consumer’s shopping basket.

Bush says that shelf-stable strains like Ganeden’s proprietary *Bacillus coagulans* GBI-30, 6086 strain (GanedenBC30) enable manufacturers to offer a wider array of probiotic-fortified products. According to Bush, GanedenBC30 can survive “most manufacturing processes, allowing [GanedenBC30] to be fortified into everyday foods.”

Lifton says spore-forming bacteria (such as Maypro’s lyophilized ProDura *Bacillus coagulans* strain) overcome formulation challenges by virtue of a protective casing that is “stable at room temperature for up to three years’ storage and is only activated with the proper conditions of heat, pH, and moisture that are found in the large intestine.”

Capsules, meanwhile, offer consumers yet another way to reap probiotics’ myriad health benefits. Capsugel and Elite One Source are addressing the manufacturing challenges that plague probiotics head on with offerings centered around the idea that capsules are both easy and effective.

Capsugel currently offers four encapsulation technologies (Vcaps Plus, DRcaps, DuoCaps, and Coni-Snap Sprinkle capsules) that Lowery says avoid many probiotics formulation and delivery hurdles.

**MULTI-OUTLET CHANNEL 10 BESTSELLING INGREDIENTS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digestive Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probiotic Supplement</td>
<td>$606,071,111</td>
<td>$587,416,760</td>
<td>3.2%</td>
</tr>
<tr>
<td>Fiber (Other)</td>
<td>$84,362,255</td>
<td>$88,450,624</td>
<td>-4.6%</td>
</tr>
<tr>
<td>Lactase</td>
<td>$39,762,010</td>
<td>$39,578,532</td>
<td>0.5%</td>
</tr>
<tr>
<td>Ginger</td>
<td>$26,900,631</td>
<td>$25,332,233</td>
<td>6.2%</td>
</tr>
<tr>
<td>Psyllium</td>
<td>$22,008,895</td>
<td>$13,878,686</td>
<td>58.6%</td>
</tr>
<tr>
<td>Digestive Enzymes (Other)</td>
<td>$21,054,162</td>
<td>$21,641,237</td>
<td>-2.7%</td>
</tr>
<tr>
<td>Fennel</td>
<td>$9,109,766</td>
<td>$7,887,075</td>
<td>15.5%</td>
</tr>
<tr>
<td>Charcoal</td>
<td>$7,702,518</td>
<td>$7,066,211</td>
<td>9.0%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$6,916,918</td>
<td>$7,648,428</td>
<td>-9.6%</td>
</tr>
<tr>
<td>Senna</td>
<td>$6,616,217</td>
<td>$5,363,357</td>
<td>23.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taurine</td>
<td>$235,525,700</td>
<td>$246,626,572</td>
<td>-4.5%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$139,213,754</td>
<td>$138,052,787</td>
<td>0.8%</td>
</tr>
<tr>
<td>Vitamin B Complex</td>
<td>$52,987,563</td>
<td>$56,491,305</td>
<td>-6.2%</td>
</tr>
<tr>
<td>Creatine</td>
<td>$50,334,988</td>
<td>$25,906,347</td>
<td>94.3%</td>
</tr>
<tr>
<td>Tyrosine</td>
<td>$48,388,279</td>
<td>$56,019,477</td>
<td>-13.6%</td>
</tr>
<tr>
<td>Caffeine</td>
<td>$48,020,620</td>
<td>$43,740,022</td>
<td>9.8%</td>
</tr>
<tr>
<td>Protein - Animal (Multi)</td>
<td>$24,241,154</td>
<td>$14,013,876</td>
<td>73.0%</td>
</tr>
<tr>
<td>Multivitamin (Women)</td>
<td>$19,263,148</td>
<td>$20,670,523</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>$12,403,549</td>
<td>$13,572,341</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Multivitamin (Senior)</td>
<td>$11,586,071</td>
<td>$10,198,490</td>
<td>13.6%</td>
</tr>
</tbody>
</table>

Contract manufacturer Elite One Source also notes that ease-of-use of capsules and chewable tablets rank high on consumers’ priority lists. In response, the company debuted a chewable probiotic tablet last fall at SupplySide West 2017.

Pharmachem’s proprietary Microbac lipid-coating technology, meanwhile, “helps protect the shelf life of the probiotic when used in formulations that contain ‘non-friendly’ ingredients,” like enzymes or acidic ingredients, explains Ralf Jäger, PhD, FISSN, CISSN, and consultant for Pharmachem Laboratories ( Kearny, NJ). Microencapsulation technology, he adds, helps ensure that the probiotics survive passage through the stomach and upper intestines, and thus enables manufacturers to incorporate probiotics into chocolates, drops, or yogurt shots.

Says Jäger: “Delivery formats allowing for easy and exact dosing are crucial for successful probiotic products, specifically for infant and children.” Delivery formats like gummies, drops, and the like, he says, may gain even more traction in the year to come.

With a wide-ranging lineup of pick-your-probiotic formats, 2018 is sure to ring in continued category success.

**Omega-3s**

The omega-3s market has certainly seen its share of ups and downs. While it’s true that fish oils are one of the most widely consumed supplements available, recent years have nevertheless seen declining sales for the once-stoppable category. With consumers latching onto tantalizing headlines touting a tenuous connection between long-chain omega-3 fatty acids and prostate cancer risk, plus the introduction of fish oil drugs and sustainability concerns, sales were bound to falter.

**On the rebound.** So, why are omega-3s on *Nutritional Outlook*’s Ingredients to Watch list? Katrin Berntsen, director of communications, Aker BioMarine (Oslo, Norway), acknowledges that the category is “rebouncing from a few soft years,” but adds that innovation in the category will likely buoy sales in the year to come. And thanks to a bevy of regulatory and research initiatives funded by the Global Organization for EPA and DHA Omega-3s (GOED; Salt Lake City), the proliferation of alternative omega-3 formats, and some innovative direct-to-consumer marketing, the tide is sure to turn.

### Eye Health

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Health Formulas</td>
<td>$110,870,112</td>
<td>$118,778,435</td>
<td>-6.7%</td>
</tr>
<tr>
<td>Multivitamin (Adult)</td>
<td>$77,507,596</td>
<td>$89,613,442</td>
<td>-13.5%</td>
</tr>
<tr>
<td>Multivitamin (Senior)</td>
<td>$41,203,330</td>
<td>$38,612,254</td>
<td>6.7%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$28,772,229</td>
<td>$25,053,661</td>
<td>14.8%</td>
</tr>
<tr>
<td>Lutein</td>
<td>$21,117,713</td>
<td>$25,470,192</td>
<td>-17.1%</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>$18,689,328</td>
<td>$14,824,598</td>
<td>26.1%</td>
</tr>
<tr>
<td>Combination Oils (Supplements)</td>
<td>$4,225,946</td>
<td>$4,245,332</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Collagen Products</td>
<td>$779,721</td>
<td>$431,952</td>
<td>80.5%</td>
</tr>
<tr>
<td>Bilberry</td>
<td>$491,015</td>
<td>$463,385</td>
<td>6.0%</td>
</tr>
<tr>
<td>Hyaluronic Acid (HA)</td>
<td>$352,163</td>
<td>$278,442</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

**On the rebound.** So, why are omega-3s on *Nutritional Outlook*’s Ingredients to Watch list? Katrin Berntsen, director of communications, Aker BioMarine (Oslo, Norway), acknowledges that the category is “rebouncing from a few soft years,” but adds that innovation in the category will likely buoy sales in the year to come. And thanks to a bevy of regulatory and research initiatives funded by the Global Organization for EPA and DHA Omega-3s (GOED; Salt Lake City), the proliferation of alternative omega-3 formats, and some innovative direct-to-consumer marketing, the tide is sure to turn.
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Ingredients to Watch

MULTI-OUTLET CHANNEL
10 BESTSELLING INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Hair, Skin, &amp; Nails</th>
<th>Joint Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotin</td>
<td>$105,171,271</td>
<td>$140,749,464</td>
</tr>
<tr>
<td>Collagen Products</td>
<td>$21,055,377</td>
<td>$39,230,604</td>
</tr>
<tr>
<td>Alpha Lipoic Acid</td>
<td>$18,480,043</td>
<td>$43,749,176</td>
</tr>
<tr>
<td>Specialty Remedies</td>
<td>$10,326,007</td>
<td>$14,526,565</td>
</tr>
<tr>
<td>Fish Oil Concentrate</td>
<td>$4,017,867</td>
<td>$11,977,782</td>
</tr>
<tr>
<td>Borage Oil</td>
<td>$2,565,208</td>
<td>$1,379,668</td>
</tr>
<tr>
<td>Shark Cartilage</td>
<td>$2,533,750</td>
<td>$4,989,698</td>
</tr>
<tr>
<td>Lysine</td>
<td>$2,022,242</td>
<td>$1,450,345</td>
</tr>
<tr>
<td>Keratin</td>
<td>$1,327,211</td>
<td>$1,400,788</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>$1,001,615</td>
<td>$1,400,788</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Heart Health</th>
<th>% Change</th>
<th>Ingredient</th>
<th>Joint Health</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish Oil Concentrate</td>
<td>$182,443,931</td>
<td>-14.7%</td>
<td>Glucosamine-Chondroitin Combo</td>
<td>$140,749,464</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Co-Enzyme Q10</td>
<td>$139,491,077</td>
<td>-9.4%</td>
<td>Glucosamine</td>
<td>$39,230,604</td>
<td>-2.6%</td>
</tr>
<tr>
<td>Pyelliun</td>
<td>$137,746,402</td>
<td>-12.7%</td>
<td>Boswellin or Boswellia</td>
<td>$14,526,565</td>
<td>15.6%</td>
</tr>
<tr>
<td>Krill Oil</td>
<td>$156,840,718</td>
<td>-13.7%</td>
<td>Hyaluronic Acid (HA)</td>
<td>$11,007,357</td>
<td>-6.1%</td>
</tr>
<tr>
<td>Vitamin E (Not Ester-E)</td>
<td>$26,354,989</td>
<td>-1.7%</td>
<td>Collagen Products</td>
<td>$9,489,698</td>
<td>-21.4%</td>
</tr>
<tr>
<td>Garlic</td>
<td>$15,270,345</td>
<td>-2.6%</td>
<td>Turmeric</td>
<td>$4,891,239</td>
<td>31.0%</td>
</tr>
<tr>
<td>Vitamin B3 (Niacin)</td>
<td>$12,617,101</td>
<td>-9.1%</td>
<td>Krill Oil</td>
<td>$1,450,345</td>
<td>-20.7%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$10,223,861</td>
<td>-12.3%</td>
<td>Cherry Fruit Supplements</td>
<td>$1,379,668</td>
<td>35.1%</td>
</tr>
<tr>
<td>Multivitamin (Senior)</td>
<td>$10,159,875</td>
<td>-42.2%</td>
<td>MSM</td>
<td>$373,952</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Red Yeast Rice</td>
<td>$9,484,678</td>
<td>-3.7%</td>
<td>Proteolytic Enzymes</td>
<td>$162,300</td>
<td>222.6%</td>
</tr>
</tbody>
</table>

High-concentrate omega-3s are increasingly in strong demand.

GOED reports that in 2016, the volume of omega-3 oils featured in products globally was up 2% from 2015. The value of the omega-3 oil ingredients, says Aldo Bernasconi, PhD, director of information and research, GOED, was $1.2 billion worldwide.

GOED has, of course, been a major player in the rehabilitation of the EPA/DHA omega-3 market, and 2017 was a banner year. In July, GOED announced that the Codex Alimentarius Commission had finally adopted a fish and krill oil standard. GOED’s research initiatives are also particularly notable. In 2017, GOED funded several meta-analyses analyzing, among other things, the effect of EPA and DHA omega-3s on the risk of coronary heart disease and the potential for EPA and DHA supplementation to reduce the risk of cardiovascular disease. GOED also published a scientific paper “which refuted a publication questioning quality and labeling claims of fish oil supplements in New Zealand.”

And it surely doesn’t hurt that last March, the American Heart Association published new recommendations for the role of marine-derived omega-3 supplements in preventing cardiovascular disease. In the updated scientific advisory, the authors wrote that omega-3 fish oil supplements can assist with secondary prevention of coronary heart disease and sudden cardiac death in patients with prevalent coronary heart disease and in patients with heart failure.

Elsewhere, GOED’s Guidelines for Controlling Omega-3 Oxidation best practices document, which was published last October, helps GOED members prevent and minimize the risk of oxidation that threatens omega-3 oils at various points along the supply chain. The document notes that the oxidation of omega-3s not only leads to rancidity, but also diminishes the ingredient’s nutritional value. And omega-3 companies are rising to meet the high-quality bar. Steve Dillingham, global director, AlaskOmega Ingredients, which is owned by Organic Technologies (Coshocton, OH), says that its omega-3 concentrates have a maximum total oxidation (TOTOX) limit of 5, “more than a five-fold reduction from the limit of 26 set by GOED.”

Raising the bar. Regulatory efforts like GOED’s are a boon in a market that’s becoming more varied by the day. Bernasconi says that there is a trend toward “products that offer a different value proposition.” For example, he says, “as the markets become more mature, consumers have started to move away from standard refined fish oils, and toward other products, particularly concentrates. Concentrates have the advantage of being able to deliver the same dosage of EPA/DHA from smaller or fewer capsules. So, in the U.S. and Europe, the volume of refined fish oils is decreasing, and concentrates are increasing.”
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Ingredients to Watch

This trend might bode well for the omega-3 category as a whole, particularly as more expensive fish oil-based drugs become a category all their own. Berascoini says that in addition to high-concentrate DHA/EPA omega-3 supplements, U.S. consumers are interested in alternative delivery forms. “Smaller capsules, tablets, emulsions, and liquid forms—the proportion of omega-3s used in those forms has doubled since 2010.” In Asia, he adds, cod liver pills are seeing rapid growth.

Dillingham agrees that the high-concentrate omega-3 market is poised to becoming the Next Big Thing in 2018. AlaskOmega has added both a 50% and 70% omega-7 concentrate in ethyl ester (EE) form, with a brand-new TG omega-7 concentrate slated to launch early this year.

AkerBiomarine, for its part, is diversifying its product portfolio with “new product offerings and different oil grades,” Bernsten says. But fish oils are not the only omega-3s seeing innovation. Bernsten says that krill oil is currently the number one growing omega-3 supplement, and adds that Aker BioMarine saw “good growth” in that category in 2017—a trend that the company expects to continue in 2018.

**MULTI-OUTLET CHANNEL 10 BESTSELLING INGREDIENTS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melatonin</td>
<td>$21,476,909</td>
<td>$209,195,255</td>
<td>5.9%</td>
</tr>
<tr>
<td>Valerian</td>
<td>$17,987,574</td>
<td>$21,868,204</td>
<td>-17.7%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$14,648,830</td>
<td>$13,729,221</td>
<td>6.7%</td>
</tr>
<tr>
<td>Ivy Leaf</td>
<td>$7,918,243</td>
<td>$6,433,947</td>
<td>23.1%</td>
</tr>
<tr>
<td>GABA</td>
<td>$1,515,199</td>
<td>$1,766,373</td>
<td>-14.2%</td>
</tr>
<tr>
<td>Bromelain</td>
<td>$1,438,150</td>
<td>$1,573,516</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Chamomile</td>
<td>$1,064,696</td>
<td>$7,485</td>
<td>13,323.3%</td>
</tr>
<tr>
<td>5-HTP</td>
<td>$891,577</td>
<td>$339,753</td>
<td>162.4%</td>
</tr>
<tr>
<td>ZMA Supplements</td>
<td>$528,523</td>
<td>$0</td>
<td>n/a</td>
</tr>
<tr>
<td>DHEA</td>
<td>$462,856</td>
<td>$367,526</td>
<td>25.9%</td>
</tr>
</tbody>
</table>

**Sleep**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
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<tbody>
<tr>
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<td>ZMA Supplements</td>
<td>$528,523</td>
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<td>n/a</td>
</tr>
<tr>
<td>DHEA</td>
<td>$462,856</td>
<td>$367,526</td>
<td>25.9%</td>
</tr>
</tbody>
</table>

**Weight Loss**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein - Animal (Multi)</td>
<td>$143,435,719</td>
<td>$157,547,017</td>
<td>-9.0%</td>
</tr>
<tr>
<td>Caffeine</td>
<td>$92,228,186</td>
<td>$91,477,824</td>
<td>0.8%</td>
</tr>
<tr>
<td>Protein - Animal (General)</td>
<td>$84,820,051</td>
<td>$87,798,714</td>
<td>-3.4%</td>
</tr>
<tr>
<td>Protein - Animal &amp; Plant Combo</td>
<td>$63,473,877</td>
<td>$59,686,604</td>
<td>6.3%</td>
</tr>
<tr>
<td>Garcinia cambogia (HCA)</td>
<td>$33,512,038</td>
<td>$35,366,085</td>
<td>-5.2%</td>
</tr>
<tr>
<td>Green Teas &amp; Supplements</td>
<td>$29,279,787</td>
<td>$42,002,573</td>
<td>-30.2%</td>
</tr>
<tr>
<td>Protein - Animal - Casein</td>
<td>$19,839,239</td>
<td>$10,976,685</td>
<td>78.9%</td>
</tr>
<tr>
<td>Glucomannan</td>
<td>$18,794,478</td>
<td>$29,397,496</td>
<td>-36.1%</td>
</tr>
<tr>
<td>Protein - Animal (Whey)</td>
<td>$17,803,307</td>
<td>$9,529,836</td>
<td>86.8%</td>
</tr>
<tr>
<td>Guarana</td>
<td>$8,847,007</td>
<td>$10,701,062</td>
<td>-17.3%</td>
</tr>
</tbody>
</table>

**Natural Channel (United States) 25 Bestselling Ingredients across All Health Conditions**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probiotic Supplement</td>
<td>$149,249,560</td>
<td>$143,491,352</td>
<td>4.0%</td>
</tr>
<tr>
<td>Protein - Plant (Multi)</td>
<td>$76,142,530</td>
<td>$81,719,600</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Fish Oil Concentrate</td>
<td>$69,045,652</td>
<td>$66,422,373</td>
<td>3.9%</td>
</tr>
<tr>
<td>Turmeric</td>
<td>$52,412,909</td>
<td>$46,048,297</td>
<td>13.8%</td>
</tr>
<tr>
<td>Multivitamin (Women)</td>
<td>$42,445,992</td>
<td>$39,902,289</td>
<td>6.4%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$37,761,763</td>
<td>$36,638,697</td>
<td>3.1%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>$31,618,009</td>
<td>$27,661,502</td>
<td>14.3%</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>$26,760,960</td>
<td>$25,140,050</td>
<td>6.4%</td>
</tr>
<tr>
<td>Calcium-Magnesium Combinations</td>
<td>$26,206,474</td>
<td>$25,836,569</td>
<td>1.4%</td>
</tr>
<tr>
<td>Vitamin C (Not Ester-C)</td>
<td>$22,030,318</td>
<td>$21,057,905</td>
<td>4.6%</td>
</tr>
<tr>
<td>Protein - Animal (Whey)</td>
<td>$21,001,496</td>
<td>$20,051,146</td>
<td>4.6%</td>
</tr>
<tr>
<td>Digestive Enzymes (Other)</td>
<td>$20,430,856</td>
<td>$19,698,030</td>
<td>3.7%</td>
</tr>
<tr>
<td>Multivitamin (Men)</td>
<td>$20,130,064</td>
<td>$18,732,060</td>
<td>7.5%</td>
</tr>
<tr>
<td>Vitamin B Complex</td>
<td>$19,622,824</td>
<td>$18,527,720</td>
<td>5.9%</td>
</tr>
<tr>
<td>Grass (Wheat or Barley)</td>
<td>$19,567,934</td>
<td>$21,730,851</td>
<td>-10.0%</td>
</tr>
<tr>
<td>Multivitamin (Adult)</td>
<td>$19,521,151</td>
<td>$20,718,350</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Multivitamin (Children)</td>
<td>$16,116,849</td>
<td>$15,594,049</td>
<td>3.4%</td>
</tr>
<tr>
<td>Collagen Products</td>
<td>$16,107,074</td>
<td>$8,944,906</td>
<td>80.1%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$15,521,381</td>
<td>$13,992,049</td>
<td>10.9%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$15,515,942</td>
<td>$16,705,845</td>
<td>-7.1%</td>
</tr>
<tr>
<td>Aloe vera</td>
<td>$15,265,693</td>
<td>$15,298,591</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Protein - Animal (General)</td>
<td>$15,120,561</td>
<td>$4,941,346</td>
<td>206.0%</td>
</tr>
<tr>
<td>Co-Enzyme Q10</td>
<td>$13,286,335</td>
<td>$13,633,097</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Vitamin C (Ester-C Only)</td>
<td>$12,171,714</td>
<td>$11,840,428</td>
<td>2.8%</td>
</tr>
<tr>
<td>Elderberry</td>
<td>$11,884,250</td>
<td>$10,592,180</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

**Data:** Dietary supplements (Vitamins & Supplements and Herbs & Homeopathics)
Source: SPINSscan Conventional, powered by IRI Worldwide
Time period: 52 weeks ending 11/5/17
Channel: U.S. conventional multi-outlet, comprising grocery, drug, Wal-Mart, mass, dollar, military, and club stores

This trend might bode well for the omega-3 category as a whole, particularly as more expensive fish oil-based drugs become a category all their own. Bernascoini says that in addition to high-concentrate DHA/EPA omega-3 supplements, U.S. consumers are interested in alternative delivery forms. “Smaller capsules, tablets, emulsions, and liquid forms—the proportion of omega-3s used in those forms has doubled since 2010.” In Asia, he adds, cod liver pills are seeing rapid growth.

Dillingham agrees that the high-concentrate omega-3 market is seeing success, and adds that the triglyceride (TG) bound form of omega-3s is also increasingly in demand, “presumably for TG’s optimal stability and sensory profile for use in liquid formulations and higher quality softgels.” Finally, Dillingham says, omega-7s may be
Connecting the dots between your product + immune health

Wellmune® is a proprietary baker’s yeast beta 1,3/1,6 glucan that is clinically proven to help strengthen the immune system. Safe for daily consumption, it’s ideal for all types of food, beverages and supplements. Learn how easy it is to deliver immune health benefits to your consumers. Connect the dots at wellmune.com.
Not only are there more options for consumers to reap the heart-health and anti-inflammatory benefits of omega-3s, but some companies are taking innovative approaches toward increasing consumer awareness about the importance of omega-3s for an overall healthy lifestyle. Good press is good press. To that end, Aker BioMarine’s Omega-3 Index Project, which first launched in the fall of 2016, aims to educate consumers about omega-3 deficiency. "By using a simple nutritional tool called the Omega-3 Index Test, " Berntsen says, “everyone will be able to measure their omega-3 levels, and then take the proper steps to devise an omega-3 regimen that works for them." Consumers administer the test (using a small, finger-pricking device), return the blood sample via mail, and await the results.

"By working with our customers, industry partners, and the media, we are able to help spread the word about the Omega-3 Index Project and bring more attention to the campaign, " Berntsen says. And drawing the eyes of consumers and industry partners can only benefit the entire industry.

**Magnesium and Zinc**

Watch out, calcium—there are two new minerals in town. Magnesium and zinc spent 2017 inching closer to calcium’s number one spot in the mineral supplements category, with data from SPINS indicating that sales for magnesium saw 7.9% growth over 2016, and zinc showing 29.7% growth over 2016 (SPINSscan Natural, SPINSscan Specialty Gourmet, Conventional Multi-Outlet [powered by IRI], 52 weeks ending November 5, 2017). With new research backing magnesium’s benefits for heart- and mental-health, and zinc’s purported immune-benefits, as well as expansion into new market segments, 2018 may be a breakout year for these two minerals.

Last September, Nutritional Outlook spoke with company representatives from Balchem/Albion Minerals (Clearfield, UT) at the SupplySide West trade show about why magnesium and zinc are on the rise. Magnesium, in particular, is showing serious market growth, says Todd Johnson, senior director of marketing, human nutrition, and pharma, Balchem/Albion Mineral. “Although calcium continues to be the best performing mineral with around 40% of the market, ” he says, “magnesium’s growth rate projects that it could overtake calcium’s position as the largest selling mineral by the year 2020.” According to SPINS, sales for magnesium as a standalone functional ingredient were $1,01,180,844 (up 7.9% over the past year), while sales for magnesium/calcium combination supplements were $78,525,572 (down 3.0% over the past year).
That's no easy feat, to be sure, but Johnson says that interest in healthy-aging supplements, novel and convenient delivery forms, and "the expansion of sports nutrition products into active nutrition" are all key factors aiding magnesium and zinc's ascent. As evidence of the latter, lozenges were the second most-popular delivery format for zinc at $11,155,099, experiencing a 38.3% growth over the previous year.

In addition, Johnson says, "magnesium is involved in nearly every major metabolic and biochemical process within the cell. Every organ has a critical need for magnesium in order to effectively perform their functions." And there's no shortage of research in the pipeline. Rosano says that "tons" of recent research supports magnesium's myriad health benefits, and not only for general wellness. "Proper magnesium intake can enhance exercise performance," explains Rosano. "When magnesium is marginal and magnesium 'stores' are low... high-endurance exercise can be dangerous."

And Johnson says that sports nutrition is one category in which magnesium supplementation is really catching on. "Sports nutrition is definitely an area in which we are seeing increasing interest," he says. "Minerals play important roles in counteracting the impact that exercise performance can have on the body. Magnesium and zinc play important roles in fighting against oxidative stress and reducing inflammation, thereby reducing muscle damage."

In addition to sports nutrition, magnesium has also shown some preliminary promise in the fields of mental and emotional wellness. "While the mechanisms of the antidepressant actions of magnesium are not entirely clear, we are seeing increasing interest in the use of magnesium in this area, particularly in the context of stress and anxiety," Johnson says. 

Both Rosanoff and Johnson state that most US consumers don't get adequate levels of magnesium in their diets. Says Johnson: "Some estimates suggest that 80% of Americans are not getting enough magnesium." With a large swath of the population seemingly at risk, the market is primed for a magnesium takeover.
**Ingredients to Watch**

### Natural Channel

#### 10 Bestselling Ingredients: Pain & Inflammation Support

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turmeric</td>
<td>$31,769,991</td>
<td>$29,031,173</td>
<td>9.4%</td>
</tr>
<tr>
<td>Arnica (Homeopathic)</td>
<td>$10,197,440</td>
<td>$9,838,944</td>
<td>3.6%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$6,431,522</td>
<td>$6,650,136</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Homeopathic Remedy (Other)</td>
<td>$1,326,155</td>
<td>$1,201,019</td>
<td>10.4%</td>
</tr>
<tr>
<td>Cherry Fruit Supplements</td>
<td>$825,766</td>
<td>$732,453</td>
<td>12.7%</td>
</tr>
<tr>
<td>Boswellin or Boswellia</td>
<td>$440,405</td>
<td>$277,796</td>
<td>58.5%</td>
</tr>
<tr>
<td>Collinsonia</td>
<td>$423,023</td>
<td>$406,500</td>
<td>4.1%</td>
</tr>
<tr>
<td>Willow Bark</td>
<td>$356,221</td>
<td>$264,987</td>
<td>34.4%</td>
</tr>
<tr>
<td>Feverfew</td>
<td>$290,701</td>
<td>$313,706</td>
<td>-7.3%</td>
</tr>
<tr>
<td>Butterbur</td>
<td>$267,209</td>
<td>$288,503</td>
<td>-7.4%</td>
</tr>
</tbody>
</table>

### Weight Loss

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein - Plant (Multi)</td>
<td>$6,556,397</td>
<td>$10,240,307</td>
<td>-36.0%</td>
</tr>
<tr>
<td>Garcinia cambogia (HCA)</td>
<td>$5,079,920</td>
<td>$4,037,755</td>
<td>25.8%</td>
</tr>
<tr>
<td>Protein - Animal (Multi)</td>
<td>$2,773,147</td>
<td>$13,132</td>
<td>20.094%</td>
</tr>
<tr>
<td>MCT (Medium-Chain Triglycerides)</td>
<td>$2,694,351</td>
<td>$2,078,322</td>
<td>29.6%</td>
</tr>
<tr>
<td>Conjugated Linoleic Acid (CLA)</td>
<td>$1,730,109</td>
<td>$1,672,745</td>
<td>3.4%</td>
</tr>
<tr>
<td>Acacia Fiber</td>
<td>$1,108,031</td>
<td>$1,486,743</td>
<td>-25.5%</td>
</tr>
<tr>
<td>Protein - Animal &amp; Plant Combo</td>
<td>$801,912</td>
<td>$1,050,861</td>
<td>-23.7%</td>
</tr>
<tr>
<td>Green Teas &amp; Supplements</td>
<td>$583,734</td>
<td>$701,627</td>
<td>-16.8%</td>
</tr>
<tr>
<td>Green Coffee Extract</td>
<td>$465,146</td>
<td>$839,690</td>
<td>-44.6%</td>
</tr>
<tr>
<td>Fiber (Other)</td>
<td>$457,701</td>
<td>$640,098</td>
<td>-28.5%</td>
</tr>
</tbody>
</table>

Data: Dietary supplements (Vitamins & Supplements and Herbs & Homeopathics)  
Source: SPINSscan Natural  
Time period: 52 weeks ending 11/5/17  
Channel: U.S. Natural supermarkets, excluding Whole Foods Market

are not fully understood,” Johnson adds, “the mineral has been shown to influence several systems associated with depression.”

According to SPINS research, mood support was the health category for which magnesium experienced the most growth. It had $14,444,421 in sales, representing a growth of 17.9% over the previous year.

Zinc, too, has benefitted from new research on its potential benefits for cognitive health. Johnson explains that “zinc plays important roles in the function of the brain, including the ability to learn and increased memory,” and notes that zinc’s brain-health benefits may be another factor contributing to its increased popularity. Beyond the brain, zinc also possesses antioxidant and anti-inflammatory properties, and is currently being studied for its potential effect on child growth, wound healing, and even vision.

The top five health focuses for zinc, according to SPINS data, were cold & flu, menopause support, prostate support, general wellness, and cardiovascular health.

**Specialty Gourmet Channel (United States)**

#### 25 Bestselling Ingredients across All Health Conditions

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probiotic Supplement</td>
<td>$9,199,291</td>
<td>$8,318,956</td>
<td>10.6%</td>
</tr>
<tr>
<td>Protein - Animal &amp; Plant Combo</td>
<td>$5,556,964</td>
<td>$6,057,128</td>
<td>-8.3%</td>
</tr>
<tr>
<td>Protein - Plant (Multi)</td>
<td>$5,294,717</td>
<td>$4,855,612</td>
<td>9.0%</td>
</tr>
<tr>
<td>Protein - Animal (General)</td>
<td>$4,041,248</td>
<td>$3,864,089</td>
<td>4.6%</td>
</tr>
<tr>
<td>Fish Oil Concentrate</td>
<td>$3,697,585</td>
<td>$3,702,335</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$2,827,558</td>
<td>$2,814,851</td>
<td>0.5%</td>
</tr>
<tr>
<td>Multivitamin (Women)</td>
<td>$2,667,706</td>
<td>$2,408,578</td>
<td>10.8%</td>
</tr>
<tr>
<td>Protein - Animal - Multi</td>
<td>$2,396,576</td>
<td>$2,126,649</td>
<td>12.7%</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>$2,307,411</td>
<td>$2,238,406</td>
<td>3.1%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$2,211,876</td>
<td>$2,126,649</td>
<td>10.2%</td>
</tr>
<tr>
<td>Multivitamin (Whey)</td>
<td>$1,871,270</td>
<td>$1,821,191</td>
<td>2.7%</td>
</tr>
<tr>
<td>Vitamin C (Not Ester-C)</td>
<td>$1,736,177</td>
<td>$1,738,128</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Multivitamin (Adult)</td>
<td>$1,539,524</td>
<td>$1,460,384</td>
<td>2.6%</td>
</tr>
<tr>
<td>Multivitamin (Children)</td>
<td>$1,498,363</td>
<td>$1,460,384</td>
<td>2.6%</td>
</tr>
<tr>
<td>Turmeric</td>
<td>$1,492,112</td>
<td>$1,293,936</td>
<td>15.3%</td>
</tr>
<tr>
<td>Multivitamin (Men)</td>
<td>$1,315,978</td>
<td>$1,194,006</td>
<td>10.2%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$1,281,991</td>
<td>$1,514,726</td>
<td>-15.4%</td>
</tr>
<tr>
<td>Melatonin</td>
<td>$1,143,682</td>
<td>$1,062,965</td>
<td>7.6%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>$1,125,211</td>
<td>$966,517</td>
<td>16.4%</td>
</tr>
<tr>
<td>Polysorbite}}{{P}}</td>
<td>$1,123,446</td>
<td>$1,145,650</td>
<td>-1.9%</td>
</tr>
<tr>
<td>Calcium–Magnesium Combinations</td>
<td>$1,063,278</td>
<td>$1,075,758</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Horehound</td>
<td>$1,026,178</td>
<td>$922,169</td>
<td>11.3%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$966,876</td>
<td>$902,291</td>
<td>7.2%</td>
</tr>
<tr>
<td>Co-Enzyme Q10</td>
<td>$936,524</td>
<td>$973,480</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Multivitamin (Senior)</td>
<td>$933,090</td>
<td>$983,440</td>
<td>-5.1%</td>
</tr>
</tbody>
</table>

Data: Dietary supplements (Vitamins & Supplements and Herbs & Homeopathics)  
Source: SPINSscan Specialty Gourmet  
Time period: 52 weeks ending 11/5/17  
Channel: U.S specialty gourmet supermarkets

Kimberly J. Decker writes for the food and nutrition industries from her base in the San Francisco area, where she enjoys eating food as much as she does writing about it.

Jennifer Prince is the associate editor of Nutritional Outlook.
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Gluten-Free
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certified

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Contact: info@goldcoastinc.com
**Ingredients to Watch**

**References**


2. He H et al., “Assessment of the drug-drug interaction potential between theacrine and caffeine,” Journal of Caffeine Research. Published online July, 2017


---

### Bone Health

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D</td>
<td>$1,356,991</td>
<td>$1,264,155</td>
<td>7.3%</td>
</tr>
<tr>
<td>Calcium–Magnesium Combinations</td>
<td>$961,294</td>
<td>$980,641</td>
<td>-2.0%</td>
</tr>
<tr>
<td>Calcium</td>
<td>$820,042</td>
<td>$859,607</td>
<td>-4.6%</td>
</tr>
<tr>
<td>Fish Oil Concentrate</td>
<td>$209,854</td>
<td>$198,044</td>
<td>6.0%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>$160,321</td>
<td>$167,905</td>
<td>-4.5%</td>
</tr>
<tr>
<td>Multivitamin (Women)</td>
<td>$100,869</td>
<td>$88,097</td>
<td>14.5%</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>$58,858</td>
<td>$55,220</td>
<td>6.6%</td>
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<tr>
<td>Collagen Products</td>
<td>$45,496</td>
<td>$36,584</td>
<td>24.4%</td>
</tr>
<tr>
<td>DHA Products</td>
<td>$13,451</td>
<td>$11,759</td>
<td>14.4%</td>
</tr>
<tr>
<td>Horsetail (Silica)</td>
<td>$9,993</td>
<td>$7,271</td>
<td>37.4%</td>
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</tbody>
</table>

---

### Cold & Flu

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$1,741,673</td>
<td>$1,719,034</td>
<td>1.3%</td>
</tr>
<tr>
<td>Vitamin C (Ester-C Only)</td>
<td>$1,674,794</td>
<td>$1,682,097</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Vitamin C (Not Ester-C)</td>
<td>$1,163,976</td>
<td>$1,099,627</td>
<td>5.9%</td>
</tr>
<tr>
<td>Horehound</td>
<td>$1,025,943</td>
<td>$922,080</td>
<td>11.3%</td>
</tr>
<tr>
<td>Chinese Herbs</td>
<td>$835,153</td>
<td>$823,237</td>
<td>1.4%</td>
</tr>
<tr>
<td>Elderberry</td>
<td>$540,644</td>
<td>$453,683</td>
<td>19.2%</td>
</tr>
<tr>
<td>Echinacea</td>
<td>$536,132</td>
<td>$506,371</td>
<td>5.9%</td>
</tr>
<tr>
<td>Zinc</td>
<td>$269,537</td>
<td>$226,954</td>
<td>18.8%</td>
</tr>
<tr>
<td>Menthol</td>
<td>$238,298</td>
<td>$227,175</td>
<td>4.9%</td>
</tr>
<tr>
<td>Echinacea–Goldenseal Combo</td>
<td>$192,719</td>
<td>$163,331</td>
<td>18.0%</td>
</tr>
</tbody>
</table>

---

### Digestive Health

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probiotic Supplement</td>
<td>$8,187,346</td>
<td>$7,548,110</td>
<td>8.5%</td>
</tr>
<tr>
<td>Digestive Enzymes (Other)</td>
<td>$552,986</td>
<td>$556,590</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Aloe vera</td>
<td>$501,710</td>
<td>$510,200</td>
<td>-1.7%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$382,183</td>
<td>$417,496</td>
<td>-8.5%</td>
</tr>
<tr>
<td>Lactase</td>
<td>$314,359</td>
<td>$337,179</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Fiber (Other)</td>
<td>$275,907</td>
<td>$229,520</td>
<td>-16.3%</td>
</tr>
<tr>
<td>Psyllium</td>
<td>$224,253</td>
<td>$247,562</td>
<td>-9.4%</td>
</tr>
<tr>
<td>Papaya</td>
<td>$127,903</td>
<td>$119,792</td>
<td>6.8%</td>
</tr>
<tr>
<td>Charcoal</td>
<td>$103,065</td>
<td>$74,116</td>
<td>39.1%</td>
</tr>
<tr>
<td>Ginger</td>
<td>$95,182</td>
<td>$84,196</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

---

### Energy Support

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein - Plant (Multi)</td>
<td>$870,972</td>
<td>$956,172</td>
<td>-8.9%</td>
</tr>
<tr>
<td>Taurine</td>
<td>$724,381</td>
<td>$797,625</td>
<td>-9.2%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$484,554</td>
<td>$449,723</td>
<td>7.7%</td>
</tr>
<tr>
<td>Tyrosine</td>
<td>$313,633</td>
<td>$354,145</td>
<td>-11.4%</td>
</tr>
<tr>
<td>Protein - Animal (Whey &amp; Milk)</td>
<td>$253,029</td>
<td>$275,911</td>
<td>-8.3%</td>
</tr>
<tr>
<td>Soy Foods</td>
<td>$214,955</td>
<td>$222,548</td>
<td>-3.4%</td>
</tr>
<tr>
<td>Maca</td>
<td>$190,927</td>
<td>$348,400</td>
<td>-45.2%</td>
</tr>
<tr>
<td>Multivitamin (Adult)</td>
<td>$181,753</td>
<td>$185,073</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Yerba Mate</td>
<td>$168,902</td>
<td>$173,636</td>
<td>-2.7%</td>
</tr>
</tbody>
</table>

---

### Heart Health

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish Oil Concentrate</td>
<td>$1,011,001</td>
<td>$1,019,652</td>
<td>-0.8%</td>
</tr>
<tr>
<td>Co-Enzyme Q10</td>
<td>$743,929</td>
<td>$749,508</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Psyllium</td>
<td>$658,102</td>
<td>$660,823</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Garlic</td>
<td>$128,126</td>
<td>$119,956</td>
<td>6.8%</td>
</tr>
<tr>
<td>Krill Oil</td>
<td>$120,913</td>
<td>$140,563</td>
<td>-14.0%</td>
</tr>
<tr>
<td>Red Yeast Rice</td>
<td>$119,585</td>
<td>$118,435</td>
<td>1.0%</td>
</tr>
<tr>
<td>Vitamin E (Not Ester-E)</td>
<td>$119,473</td>
<td>$114,983</td>
<td>3.9%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>$76,137</td>
<td>$79,768</td>
<td>-4.6%</td>
</tr>
<tr>
<td>Flax Seed and/or Oil</td>
<td>$70,483</td>
<td>$93,292</td>
<td>-24.4%</td>
</tr>
<tr>
<td>Hawthorne</td>
<td>$54,564</td>
<td>$57,330</td>
<td>-4.8%</td>
</tr>
</tbody>
</table>
Root, Leaf, or Flower?

Plant part adulteration is an unfortunate reality. Are you getting what you paid for? Is it really what you are claiming on your label? We’re here to help. No other contract lab knows herbal testing like Alkemist.
## Mood Support

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
<td>$391,055</td>
<td>$301,023</td>
<td>29.9%</td>
</tr>
<tr>
<td>Flower Essences</td>
<td>$312,133</td>
<td>$307,264</td>
<td>1.6%</td>
</tr>
<tr>
<td>Ashwaganda</td>
<td>$189,909</td>
<td>$119,003</td>
<td>59.6%</td>
</tr>
<tr>
<td>5-HTP</td>
<td>$125,009</td>
<td>$132,708</td>
<td>-5.8%</td>
</tr>
<tr>
<td>Kava</td>
<td>$123,204</td>
<td>$90,854</td>
<td>35.6%</td>
</tr>
<tr>
<td>St. John’s Wort</td>
<td>$96,822</td>
<td>$99,582</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Gaba</td>
<td>$76,828</td>
<td>$72,478</td>
<td>6.0%</td>
</tr>
<tr>
<td>Calcium–Magnesium Combinations</td>
<td>$70,907</td>
<td>$65,038</td>
<td>9.0%</td>
</tr>
<tr>
<td>Theanine</td>
<td>$62,769</td>
<td>$61,130</td>
<td>2.7%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathy)</td>
<td>$61,961</td>
<td>$63,240</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

## Pain & Inflammation Support

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turmeric</td>
<td>$664,244</td>
<td>$606,111</td>
<td>9.6%</td>
</tr>
<tr>
<td>Arnica (Homeopathic)</td>
<td>$546,219</td>
<td>$535,945</td>
<td>1.9%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathic)</td>
<td>$324,172</td>
<td>$369,176</td>
<td>-12.2%</td>
</tr>
<tr>
<td>Homeopathic Remedy (Other)</td>
<td>$56,518</td>
<td>$52,122</td>
<td>8.4%</td>
</tr>
<tr>
<td>Arnica (Herbal)</td>
<td>$16,310</td>
<td>$19,557</td>
<td>-16.6%</td>
</tr>
<tr>
<td>Protein - Plant (Multi)</td>
<td>$13,295</td>
<td>$14,383</td>
<td>-7.6%</td>
</tr>
<tr>
<td>Butterbur</td>
<td>$10,022</td>
<td>$12,918</td>
<td>-22.4%</td>
</tr>
<tr>
<td>Boswellin or Boswellia</td>
<td>$8,682</td>
<td>$6,111</td>
<td>42.1%</td>
</tr>
<tr>
<td>Homeopathic Cell Salts</td>
<td>$7,208</td>
<td>$7,326</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Cherry Fruit</td>
<td>$6,687</td>
<td>$9,480</td>
<td>-29.5%</td>
</tr>
</tbody>
</table>

## Sleep

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
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<td>Flower Essences</td>
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<td>$307,264</td>
<td>1.6%</td>
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<tr>
<td>Ashwaganda</td>
<td>$189,909</td>
<td>$119,003</td>
<td>59.6%</td>
</tr>
<tr>
<td>5-HTP</td>
<td>$125,009</td>
<td>$132,708</td>
<td>-5.8%</td>
</tr>
<tr>
<td>Kava</td>
<td>$123,204</td>
<td>$90,854</td>
<td>35.6%</td>
</tr>
<tr>
<td>St. John’s Wort</td>
<td>$96,822</td>
<td>$99,582</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Gaba</td>
<td>$76,828</td>
<td>$72,478</td>
<td>6.0%</td>
</tr>
<tr>
<td>Calcium–Magnesium Combinations</td>
<td>$70,907</td>
<td>$65,038</td>
<td>9.0%</td>
</tr>
<tr>
<td>Theanine</td>
<td>$62,769</td>
<td>$61,130</td>
<td>2.7%</td>
</tr>
<tr>
<td>Specialty Remedies (Homeopathy)</td>
<td>$61,961</td>
<td>$63,240</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

## Weight Loss

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Current Dollars</th>
<th>Year-Ago Dollars</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Flower Essences</td>
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<td>$307,264</td>
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<tr>
<td>Ashwaganda</td>
<td>$189,909</td>
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</tr>
<tr>
<td>5-HTP</td>
<td>$125,009</td>
<td>$132,708</td>
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<td>Kava</td>
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<td>$90,854</td>
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</tr>
<tr>
<td>St. John’s Wort</td>
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<td>$99,582</td>
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</tr>
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</tr>
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<tr>
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<td>$61,961</td>
<td>$63,240</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

---

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• Personal Care
• Food & Beverage
• Medical Food

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Surprises of 2017

The more things change, the more they stay the same, right? Not for ingredients in the vitamin, dietary supplement, and herbal product spaces they don’t. Over the past 12 months, the supplements industry has witnessed sizable shifts in which health-and-wellness ingredients are hot, which are not, and which are just waiting to be discovered.

To get a better handle on what 2017’s patterns reveal, Nutritional Outlook asked the market researchers at SPINS (Chicago) to point to ingredients for which this year’s sales data tells a deeper story—happy or otherwise.

Protein

Another year dawns—and protein is still well-nigh inescapable. But a dive into the data uncovers no lack of ferment within the category.

Consider the story surrounding plant proteins. When looking at plant-based options broadly, their continued growth in the conventional multi-outlet (MULO) channel—at a rate of 20% in 2017—signals mainstream appeal. But that 20% rate is a fraction of the 53.5% growth that plant proteins saw in MULO during 2016, and it accompanies an 8.1% drop in sales in the natural channel.

The story for multi-plant protein blends, however, is rosier, as sales in MULO rose at a rate of 36.7% to hit more than $92 million in 2017. Speaking specifically about multi-source plant ingredient combinations, Scott Dicker, natural products researcher for SPINS, notes that such products “have been perceived as more natural, perhaps clean label and thereby more popular among natural products industry (NPI) consumers.”

All told, they accounted for more than half of sales in the plant-based set, he adds, despite their notching a decline in the natural channel.

And don’t forget animal proteins! In almost the reverse of the plant world, animal-based protein sales are trending upward in the natural channel, hitting more than $48 million at a growth rate of 21.8%, while declining by 0.1% in MULO. That said, Dicker notes, “Because natural channel shoppers prioritize clean labels, NPI attributes such as grass-fed dairy proteins are now boosting popularity in the natural space. Dairy protein has caught up to the label claims and positioning that drives the NPI, and they are taking back a lot of the market share.”

Bee Products, Pollen, and Propolis

First, some clarification: We all know bee pollen as a widely touted “superfood” rich in vitamins; bee propolis, on the other hand, is less familiar. A resin extracted from beehives, bee propolis has a long history of traditional use aiding wounds and canker sores, among other indications. Meanwhile, SPINS defines bee products as those containing honey as a functional ingredient.

So, with those definitions in mind, SPINS reports cross-channel sales growth of all three as up over the previous year. But while bee products and pollen have enjoyed higher growth in MULO than in the natural channel—up 32.6% and 250%, respectively—bee propolis is doing comparatively better in the natural and specialty gourmet channels (11% and 22.3%, respectively).

Kim Kawa, senior nutrition researcher for SPINS, notes that across channels, bee products positioned as for children contributed to

INGREDIENT SALES

The most unexpected supplements sales trends from last year, according to SPINS.

BY KIMBERLY J. DECKER
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Inflammation, C-reactive protein (hsCRP), levels of uric acid, and lipoprotein(a) are all indices to consider. In clinical studies, Gugulipid® was shown to significantly benefit the combination of all these factors. Antioxidant rich foods such as healthful berries, red wine, and an Ayurvedic medicinal preparation for cardiovascular wellness, Drakshasava, contain stilbenol compounds such as resveratrol (concentrated in Resvenox®) and pterostilbene (the biomarker in Silbinol®), that target inflammation, sugar and lipid metabolism.*

PATENTS: US 7,253,324; US 6,436,991


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* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, mitigate or prevent any disease.
“Multiple studies pair black seed with turmeric, and since turmeric is on everyone’s radar, this could end up being an avenue of introduction for consumers, as well,” says Kim Kawa of SPINS.

Yet even today, their profile as functional ingredients in the health-and-wellness arena continues to grow. Black seed has seen triple-digit growth over the past 52 weeks in all three channels that SPINS monitors: 347.6% in MULO, 220.4% in natural, and 233.8% in specialty gourmet. That makes for an aggregate sales volume of just over $4.5 million. (Not bad for an ingredient with cross-channel sales of only $1.4 million one year ago.)

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Black, or Nigella, Seed
Whether you call it black cumin, black caraway, or just plain black seed, the seeds of the Nigella sativa plant are a staple of ancient healing traditions, particularly Ayurvedic medicine.

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Elderberry
It doesn’t hurt to be an antioxidant-rich berry these days, as sales figures for elderberry (genus Sambucus) attest. Elderberry ingredients have been growing at double-digit rates in 2017, most notably in MULO, where sales hit well over $17 million, up 31.9% from the previous year.

Kawa points out that the most popular elderberry form in MULO by far was the gummy ($6.4 million and 90.8% growth over the previous year). But in the natural and specialty gourmet channels, elderberry liquids ($6.5 million in sales) and tinctures ($2.5 million) were the winners overall.

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“I t’s interesting to note that the top-ranking product in the natural channel is in gummy form, followed by liquid syrups,” Kawa says, “and they’re all manufactured by well-established brands.” As for the specialty gourmet channel, the top three products are all liquids.

Cranberry
If elderberry was 2017’s antioxidant-berry “hero,” let’s call cranberry its slightly diminished
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sidekick. For despite studies linking it to relief for everything from urinary tract infections to gum disease, cranberry as a supplement ingredient saw its sales decline 7.9% across all channels this past year. Quite a contrast from its 18.8% growth a year before.

Even cranberry-based foods and beverages—cranberry sauce excepted—chalked up poorer sales in 2017 relative to 2016. But those looking for a bright spot can turn their eyes to product innovations that blend cranberry with other popular health-and-wellness ingredients. For example, Kawa says, “At Expo East, Decas’ whole cranberries and omega-enriched cranberries stood out to one of our trend trackers. One example of how cranberries might turn these numbers around.”

**Echinacea**

Cold and flu season never fails to call to mind echinacea—that standby of under-the-weather herbal remedies. And while watchers of the supplement space might wonder what surprises Echinacea could possibly still have up its sleeve, sales of the ingredient were up 22.1% across the board this year, with the highest growth (24%, for a total of well more than $81 million in sales) registering in the MULO channel.

And how are NPI consumers enjoying their Echinacea supplements these days? Shoppers in MULO appear to favor gummies and chewable tablets to the tune of almost $48 million and over $18 million, respectively. (Worth noting: chewable tablet sales grew in MULO at an impressive 75.1% rate in 2017.)

Natural and specialty gourmet shoppers, by contrast, spend their Echinacea dollars in old-school style, making tinctures ($3.2 million) and capsules ($1.7 million) the most popular supplement formats in those channels today.

**Cider Vinegar Supplements**

Ask any hipster and they’ll tell you that all things fermented—including cider vinegars—are the old-timey wave of the future. (And don’t get them started on the “mother.”) Thus, a boomlet in cider vinegar supplements may be a side effect of the vogue for fire ciders—herb-, root-, and peel-infused vinegars championed for their anti-inflammatory, antibacterial and metabolism-boosting effects. Adds Kawa, “We suspect this rise in sales aligns with the rise we’ve seen in drinking vinegars, shrubs, switchels, and fire cider beverages.

What rise in sales? In the MULO channel alone, cider vinegar supplements raked in $3.8 million over the past year, which works out to a growth rate of 146.2%. And consumers aren’t just buying these products because they’re cool; across all sales channels, Kawa says, “Health focus marketing reports weight loss”—$2.4 million—“and digestive health”—$1.2 million—“as top-ranking” reasons for purchase, by absolute dollars.

**Medium-Chain Triglycerides**

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Medium-chain triglycerides are growing across all channels. By the end of 2017, they generated $7.3 million in sales, which represented 87.4% growth over the previous year.

Says Dicker, “This rise may be correlated with the boom in the ketogenic diet, in which MCTs have been tagged as the premiere fat source of energy. There are now brands featuring whole keto lines.” No wonder, then, that SPINS has noticed a rise in sports-nutrition formulas that include MCTs.

The health focus that consumers seek is clear: across channels, weight loss, and energy support came out tops in absolute-dollar sales, at $2.9 million and $1.7 million, respectively. Single-ingredient liquid oil supplements marketed by well-established brands appear to drive most growth in absolute dollars, Dicker notes, but top growth rates percentage-wise stem from newer brands in the natural channel pitching their products’ as amenable with the bulletproof diet, or plugging their added flavors (e.g., strawberry, coconut, vanilla, or hazelnut).

“MCT is beginning to gain more traction in the specialty gourmet channel,” Dicker adds, “and although sales aren’t as significant as those in the natural channel or in MULO, this is where we’re seeing many more SKUs just starting to report sales.”

Reference
1. All sales numbers are courtesy of SPINS and cover the 52 weeks ending November 5, 2017. Statistics are derived from a cross-channel aggregate data pull of multi-outlet, natural, and specialty-gourmet retailers of the total U.S. market, unless otherwise specified.
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Taste is king when it comes to the success of a food or beverage. To tap into what’s hot and what’s not in the world of natural flavors, *Nutritional Outlook* once again turned to top flavor houses and experts for its annual forecast of which flavor trends will be big in the coming year.

Many of the experts *Nutritional Outlook* spoke with for this story agree that in 2018, authenticity and transparency will reign supreme, with flavor origins front and center. And, continuing a trend from years past, consumers will continue to demand new and exotic flavors, as well as upgraded but familiar flavors both savory and sweet. Soumya Nair, director, marketing insights, Kerry Ingredients (Beloit, WI), points to the company’s Flavor Forecast program, which predicts that this year, “authentic flavor experiences” from around the world, as well as continued demand for clean ingredients, will be major market drivers.
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Greg Kaminski, executive research chef, Synergy Flavors (Wauconda, IL), agrees. According to Mintel, he says, “Millennials are interested in different profiles, ethnic infusions, and the inferred flavors that are imparted by using specific preparation techniques.” Millennials are largely to credit for increased attention to ingredient origins, as well as for products that boast a cleaner label.

Nair adds that more than 75% of consumers are interested in learning more about the ingredients in products. “Clean-label, she continues, “has charged the food industry with a new challenge to meet consumer desire for organic, GMO-free, and artificial-free food and beverages.”

**Authentically Delicious**

According to Nair, an overarching trend that is likely to influence flavors of all kinds is authenticity for flavors from cuisines that consumers may not be familiar with. “The thirst for authentic experiences has seen a surge of unique flavors and blends that are true to the cuisine, inspired by the culinary scene,” she says. No longer are consumers content with just sriracha—though it’s still very much in demand. Today’s shoppers are looking for brand-new cultural culinary experiences that ring true to global cuisines.

In no culinary tradition is this more evident, she says, than in Asian cuisines. “Simmering over the last few years,” Nair explains, “Asian cuisines are ready to take America by storm—Korean, Filipino, Indonesian, and Indian. Flavor blends that are unique to these cuisines will offer consumers a new level of authentic sophistication.”

**Spice is Still Nice**

And spicy flavors are major players in many Asian cuisines. In 2018, spices and herbs are likely to remain near the top of consumers’ minds—particularly when those herbs and spices are culturally authentic. Nair says that consumer familiarity with spicy flavors like sriracha has paved the way for other, more exotic flavors. And consumers are lining up to try something a little out of the ordinary like never before. As the population becomes more diverse, consumers that would once have shied away from such bold flavors are now embracing the unfamiliar.

Speaking of sriracha, Nair points to data from Mintel indicating that sriracha-flavored
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product launches grew by 54% in the last two years, but acknowledges that it was “all the rage” a few years back. Now, she says, exotic spices like Filipino adobo, which saw a 133% increase in product launches in the last year alone, per Mintel, and the chili pepper Piri Piri, which saw a 67% increase in launches between 2016 and 2017, are poised to become the next big spicy flavors.

Nair points to the sweet and spicy fermented condiment Korean gochujang, which, according to data from Mintel, saw a 100% increase in product launches between 2016 and 2017.

Indian flavors have also seen impressive growth in the last year. Tandoori spice, for example, saw a whopping 133% increase in product launches in the last year, while Indonesian sambal, a hot sauce or paste made from a mixture of various chili peppers plus either shrimp paste, fish sauce, garlic, or ginger, among many others, has seen more than 400% growth in products over the last two years, per Nielsen Sales Data.

Elsewhere, adds Nair, “Moroccan za’atar, a blend of hyssop, sumac, sesame and salt, and Ethiopian berbere, a spice blend of chili peppers, garlic, ginger, basil, korarima, rue, ajwain or radhuni, nigella, and fenugreek, are other cuisines that have blended their way into the hearts of American millennials.”

Spicy flavors have continued to make inroads into the beverage and sweets categories as well. Nair says that flavors like pink peppercorn in desserts and ancho chili in cocktails are two examples of a growing trend that is showing no signs of slowing in 2018.

**Herbal Everywhere**

Over the past few years, the seeds have been planted in consumers’ minds about the myriad health benefits of adaptogenic and super herbs. Nair says that super herbs answer growing consumer demand for “natural and new methods to achieve nutritional and emotional balance through food and beverages.”

While the roller coaster that was 2017 may be behind us, but no less front-of-mind, consumers are turning to herbal remedies for what ails them from the likes of the ever-popular turmeric, as well as the staple ginger, and relative newcomer maca. These adaptogenic herbs, which have been used in many cultures for hundreds, if not thousands, of years, are all experiencing significant growth, she says. Nair points to statistics from Datassential, which show that turmeric has grown 176% on menus over the last four years. Sales for ginger-flavored beverages, meanwhile, have reached $200 million in the last year alone.

Turmeric, which found itself in the top 10 herbs in the mainstream channel of the annual *HerbalGram* market report,1 certainly isn’t going anywhere in 2018. Per that report, turmeric saw sales growth increases to the tune of 85.5%. Nair explains that turmeric’s medicinal benefits—which include its anti-inflammatory and antioxidant properties, as well as its ability to elevate mood, have all contributed to its steady ascent to the top of the charts.

Maca, for its part, boasts positive effects on hormone balance, energy levels, and is a noted “health booster,” says Nair. In addition to maca, which is quickly catching on with consumers, other herbs like moringa, ashwagandha, ginseng, and holy basil are also showing strong potential growth—particularly for beverages.

Moringa, in particular, appears to be on the rise in a big way. Megan Trent, marketing representative, Gold Coast Ingredients (Commerce, CA) explains: “We expect to see new moringa, today’s trending superfood, flavored beverages and nutritional snacks.”

**Smoky is Smokin’**

Flavor authenticity can take many forms—some offer consumers a sense of nostalgia for American cuisine. For example, smoky flavors, which hearken back to some of the most American of culinary traditions, like campfires and barbecue, are continuing to gain steam in an ever-increasing range of products, from food and beverage formulations to desserts.

Nair says that “smoke has been big part of America, bringing comfort with bold new flavors and techniques.” She cites Natural Hardwood Smoke as the mainstream smoke flavor of choice. This flavor alone is purportedly worth almost a billion dollars in retail products alone in 2017, per data from Nielsen.

Hickory and applewood smoke flavors, meanwhile, are cropping up on menus more and more frequently as well, she adds. “Chefs push the envelope on the nostalgic favorite using tea and coffee when smoking meats.” And smoky flavors have also made appearances in desserts, with 150% growth in launch activity in a year, per Mintel, and in cocktails, with 27% growth on menus in a year, per Datassential.

**The Power of Fruits and Flowers**

In case there was any concern that fruity flavors were in danger of losing footing in 2018, rest easy. Nair says that “this movement toward real and wholesome ingredients and flavors has created high interest in coconut as a flavor, a base, and also as an ingredient.” She adds that while coconut is an established, mainstream flavor for beverages, products containing coconut flavors have continued to grow in both popularity and in sales, with 10% growth over the last two years in product launches, according to Mintel, and a 26% increase in sales in savory foods over the last two years, according to Nielsen.

Blood orange, meanwhile, offers consumers a bolder twist on the more traditional and familiar Valencia orange flavor, says Kaminski. “Blood orange appeals to consumers by tapping into their growing demand for naturally grown and better-for-you ingredients. Besides the provocative name, consumers also enjoy how juicy and flavorful blood orange is.”

While blood orange has previously been used as a flavoring in liquor, Kaminski adds, “Synergy feels that blood orange will appear more often in baked goods, confections, and non-alcoholic beverages on restaurant menus and on grocery store shelves.” For example, in decadent dessert applications like blood orange cream cake.

Floral flavors continue to show impressive staying power, as well. Says Synergy’s Kaminski: “Floral flavor use in food and beverage applications has grown 88% over the past year, as reported by Mintel, as consumers’ desire for natural flavors has fueled the use of botanical flavors.”

One such flavor Kaminski points to is elderflower. “Synergy Flavors sees this flavor increasing in popularity in 2018 and beyond,” Kaminski explains.

And though elderflower may not be as familiar to consumers as other florals like rose or violet, cocktail-savvy consumers may have encountered it at their local watering hole.
“Elderflower Liqueur, affectionately referred to as a ‘bartender’s ketchup,’ has been extensively used in cocktails,” says Kaminski, “but in the upcoming year, Synergy foresees it being used as the primary flavor in many desserts, gourmet candies, and baked goods.”

Elderflower, he adds, is suited to this wider range of applications; its "sweet, subtle [flavor] profile allow consumers to enjoy it as a standalone of combination flavor," succeeding where more perfume-like floral flavors falter. One example of elderflower flavor in action, he adds, is elderflower chocolate-covered caramels.

**Have Your Cake and Eat It Too**

It’s not only fruity and floral-flavored desserts that are piquing consumer interest. Flavor experts tell *Nutritional Outlook* that sweeter, confectionary flavors more traditionally associated with dessert applications are still going to tempt consumers with a sweet tooth in 2018. As with many of the other flavor categories in this list, the flavors likely to be big in the coming year appeal to consumers’ desire for nostalgic ingredients done right.

Gold Coast’s Trent points to cake flavors as a category to watch. “A few years ago,” she says, “red velvet flavor was introduced to the market, and then birthday cake flavor stepped up as a competitor.” In the coming year, she adds, there are likely to be a few contenders for top trending cake flavor. “One prospect is butter cake flavor. Fine dining restaurants have been pushing their homemade, gooey butter cake recipes, and we foresee a rise in demand for butter cake.”

Synergy’s Kaminski, meanwhile, says that burnt caramel is set to move from its position as a topping or component of a dessert to the main event. “2018 will be the year burnt caramel will be seen on restaurant menus, on grocery store shelves, and at cocktail bars as a standalone flavor,” he explains, for example, in a burnt caramel-flavored martini.

“More than ever before, consumers are looking to push their palettes further by trying flavors created by unique methods,” Kaminski adds. He points to data from Mintel, which show that Millennials are interested in different flavor profiles and infusions, as well as flavors that can only come from certain preparation techniques—in caramel’s case, the caramelization, burning, or browning. “A burnt caramel flavor pairs the sweet, milky notes of the caramel with the deep and slightly smoky characteristics of burning the caramel,” he says. “This flavor creation process that allows consumers to distinguish the burnt and caramel flavors while enjoying one finished product that combines the best of both.”

**Reference**

Superfruits: Old Faves and New Raves

BY MAUREEN KINGSLEY

As Nutritional Outlook has reported several times over the past couple of years, the superfruit category remains strong, featuring a consistent foundation of pomegranate, acai, blueberry, and other well-knowns, plus a rotating crop of newly “discovered” stars. As Kim Kawa, senior nutrition researcher for SPINS (Chicago) puts it, “recognized superfruits are already famous for their nutritional density and appeal as antioxidants,” but a “solid backstory,” such as that of pomegranate, baobab, jackfruit, and more, “is the extra factor brands can use to build consumer trust and increase awareness of these products.” She notes that the term superfood is more widely used, but that superfruit “doesn’t appear to be fading from the lexicon.”

What follows is a round-up of observations from market analysts and industry insiders regarding up-and-coming potential superfruits, updates on old favorites, and some details regarding the very current trend of blending superfruit ingredients with other botanicals associated with wellness.

Newly Rediscovered Stars: Mango and Cantaloupe
Kawa has observed the emergence of mango as a potential “new” superfruit during the past 12 months. “A quick review of dried-fruit items added to our product library in the past year spotlights more than 20 new SKUs containing dried mango,” she notes. “Dried and freeze-dried mango ranked in the top two slots in this segment of the Natural Channel.”

She adds that while she’s not seeing these mango food products labeled specifically as “superfruit” (yet), she believes there is potential for consumers to view them as such. “Packaging for one of these products, for example, highlights vitamins A and C, as well as fiber content. There is a Paleo-centric brand highlighting no added sugar, a trend reflected in more than one new product.” Kawa says she’s also seeing mango paired with organic chili-pepper powder and organic hibiscus powder.
Ramon Luna, marketing coordinator for Ecuadorian Rainforest (Belleville, NJ), points to cantaloupe as another seemingly ordinary fruit that appears positioned for categorizing as a superfruit. Luna says cantaloupe “had a big impact in 2017,” adding, “It is no surprise to me that cantaloupe has become even more popular: I’m just surprised it took so long.”

The melon is “packed to the brim with nutrients that make it as versatile for formulation as it is for dishes,” Luna says. It contains vitamin C, vitamin A (in the form of carotenoids), potassium, B vitamins, and vitamin K.

**Pomegranate: Holding Its Own**

“Pomegranate was the top superfruit” for 2017 food and beverage launches worldwide, capturing nearly one-quarter (23%) of all new superfruit-product launches, according to research from Innova Market Insights (Arnhem, Netherlands). Of those new pomegranate-based product releases, almost half were beverages, including juice and juice drinks, tea, iced tea, and fermented beverages.

“Pomegranate is a beloved ingredient that consumers now know has a reputable nutritional profile,” explains Luna. “Its familiarity and exoticness; though seemingly juxtaposed, have kept pomegranate a decent seller.”

**Baobab and Goji Berry: Still Going Strong**

Although its superfruit-market footprint is still quite small, the fruit from the baobab tree was the fastest-growing superfruit, in terms of new product launches, from 2012 to 2016, according to Innova Market Insights data. Babobab-based product launches demonstrated a nearly 80% (79.6%) compound annual growth rate over that date range, with cereal and energy bars, juices, and snacks accounting for most of those launches.

Market-analysis firm SPINS also points to baobab’s recent appearance in “superfood candies,” which is helping to keep baobab visible to consumers and exemplifies food manufacturers’ willingness to experiment with it.

Innova Market Insights calls goji berry “one of the top and fastest-growing superfruits” for new product launches from 2012 to 2016, pointing to its steady increase in indexed new product launches worldwide. Goji berry’s appearance in new products is not sudden or dramatic like baobab; rather, its growth is slow, but remarkably consistent.

**North America’s Darlings: Blueberry, Cranberry, Cherry**

Some superfruit trends are hitting pretty close to home, so to speak. “Blueberries are still in very high demand, and not just for their nutritional value,” states Luna. “While blueberries do offer nutrients perfect for various formulations, they also offer a distinct natural color” used to change or enhance a food or beverage product’s hue, he explains. He also points to blueberry’s use as a natural-flavor ingredient, particularly for functional foods and beverages marketed as “clean label.” Finally, blueberries contain a significant amount of fiber, making them “a great addition in any digestive-support product. This versatility has kept the blueberry popular and very much in need,” Luna concludes.

Cranberry, too, is a superfruit valued not only for its phytonutrients and association with urinary-tract health, but also for its use as a natural-color ingredient, Luna says. One interesting cranberry food trend SPINS’ Kawa notes is whole dried cranberries enriched with beneficial fats. “At Expo East, [Massachusetts-based cranberry producer] Decas’ whole dried cranberries and omega-fatty-acid-enriched dried cranberries stood out to one of our trend trackers. Adding a beneficial fat into cranberry products may be a way for this superfruit to make a trendy comeback,” she says.

While overall cranberry sales have “taken a dip across the SPINS product library,” Kawa remarks, “Essential fatty acids may be more appealing to consumers in more of a whole-food form, with cranberries serving as a sweet vehicle to meet health goals.”

Cherry, a third superfruit grown domestically in the United States that is readily recognized among consumers, continues to appear in products ranging from juice to capsule supplements and was cited by Ali-son Raban, certified food scientist, BI Nutraceuticals (Rancho Dominguez, CA) as a common fruit “discovered” as a superfruit. American consumers associate tart cherry in particular with reduced inflammation, joint health, and gout reduction, and a small study appearing in *American Journal of Clinical Nutrition* in 2016 may support the fruit’s relationship with reduced hypertension.1

Raban adds that other common grocery-store fruits recently “discovered” as superfruits include blackberry, strawberry, and pineapple.

**Blends: Combining Superfruits with Other Wellness Ingredients**

An emerging superfruit trend among both food and beverage brands and supplement brands is combining known superfruits with other botanicals associated with wellness, such as herbs (e.g., ginger), greens, and other vegetables. “I think we’ll see more superfruits incorporated into products that already use superfood terminology,” Kawa predicts, “especially in the dietary supplement department. When combined with superfoods, superherbs, or greens, for example, products containing recognizable superfruits are more likely to catch consumers’ eyes and be marketed for a targeted health benefit, such as beauty, detoxification, focus, and wellness.”

Raban shares this view, adding, “As we see more interest in other fruits, super or not, we do notice that variety is becoming the bigger trend. There is movement away from everyone formulating a pomegranate or acai to match the competition toward developing one’s own special blend, and including not just fruits but vegetables and popular botanicals.”

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**Maureen Kingsley** is a freelance writer, editor, and proofreader based in Los Angeles. She covers a variety of industries, including medical technology, food-ingredient manufacturing, and cinematography.

**Reference**

Few end-use customers understand the expertise required to manufacture a high-quality dietary supplement tablet, capsule, or drink mix. Still fewer understand the role that a high-quality blend plays in a final, finished product. Those who specialize in the industrial blending business, however, know that the ability to produce a high-quality product depends not only on their own blending prowess and the equipment at hand but also on how well their own brand-manufacturer customers specify their own needs out the gate.

Ahead, Nutritional Outlook interviews experts in different areas of the blending business about today’s biggest blending challenges and how brand marketers can ensure that their projects are a success.

Nutritional Outlook: How are nutraceutical blends—and, particularly, powder blends—most commonly used in end-formulations these days? In supplement capsules and tablets? In drink mixes, beverages, and bars?

Vincent Tricarico, vice president of contract manufacturing for contract manufacturer NutraScience Labs (Farmingdale, NY): In our business, we see every imaginable idea come our way! We usually see blends (with proteins, energy, immune, and digestive being the most common) added to powdered formulations that are naturally flavored and sweetened. Occasionally, we’ll see them in capsules as well, but the doses tend to be small due to the limits presented by capsule sizes.

Bob McCrimlisk, vice president of operations for manufacturer and ingredients supplier Pharmachem Laboratories Inc. (Paterson, NJ): All of the above. Premix blends provide the formulator ease of use for inclusion in any type of dosage/delivery form.

Blending is not always the best way to get the best results, however. For tableting, we typically use traditional wet granulations and/or a combination of processes for best results, such as smaller tablets for better consumer compliance. We have several process technologies that we utilize depending on the job at hand.

How has it become more challenging for companies to achieve an effective—and uniform—custom blend these days given the wide variety of nutraceutical ingredients, particle sizes, viscosities, etc., being incorporated in multi-ingredient blends?

Tricarico: Consumer demands for minimally processed products have triggered a shift in how raw materials (both synthetic and “natural”) are processed. It feels as though each day we’re witnessing new advances that allow for less processing.

McCrimlisk: A common approach is premixing small micronutrients prior to
inclusion in a blend. Additionally, layering or sandwiching ingredients in the blender is a common approach. And, our process technologies better ensure blend uniformity.

Ken Langhorn, technical director for mixing-equipment specialist Charles Ross & Son Company (Hauppauge, NY): We see formulations increasing in regards to the number of ingredients. The additional ingredients can be in very low percentages, so selection of the appropriate blender type is crucial in ensuring the product is uniform throughout the batch.

What are some of the most common variables/challenges that occur during blending projects?

Langhorn: For some products, the challenge can be lumps in a raw material; for others, it may be the delicate nature of some components.

McCrimlisk: One challenge is nonphysical uniformity of ingredients to be blended, which may require pre-milling or screening of certain products. Our experience, combined with our various technologies and processes, allow us to excel at this.

Tricarico: Uniformity is a big one—making sure that the desired amounts of nutrients are being delivered in each serving. Caking can also be an issue with hydroscopic materials. That said, I think one of the biggest challenges of manufacturing today continues to be getting an all-natural formula to take on flavors similar to those found in the synthetic products of yesterday. Overcoming challenges like these usually requires industry experience.

Can you describe a few novel ingredients that are becoming more popular to formulate with today, but that are especially challenging to deal with in a multi-ingredient blend?

Tricarico: Right now, turmeric is very popular. While it may be becoming less “novel” with each passing day, it can still prove tricky to manufacture with. When used in powdered formulations, the taste and color of most turmeric blends tend to be very overpowering. Similarly, some of the vegan proteins, which have become increasingly popular, can prove very challenging to flavor and sweeten.

McCrimlisk: Probiotics are very popular, but are delicate to work with and not compatible with many ingredients and excipients. Pharmachem Labs offers fully encapsulated probiotics, which alleviate many of these concerns.

What are some of the best ways to achieve a uniform blend when dealing with ingredients that are difficult to blend together?

Langhorn: It really depends on the challenge. We offer several different product lines, specifically for dry powders, for this reason. Each product line will have unique strengths and weaknesses. Selection of the appropriate blender will capitalize on the strengths to solve the problem.

McCrimlisk: Layering or sandwiching of the ingredients in the blender is helpful. Avoid over-blending, which can also lead to segregation. And, again, knowing which ingredients shouldn’t be combined without a coating, which ingredients are heat sensitive, and so on, are crucially important.

In contract manufacturing, what are the most common challenges and problems encountered when accepting incoming raw materials from ingredient suppliers? How can companies best avoid these types of problems?

McCrimlisk: The industry has advanced through the years to where now you can expect all documents and products to be supplied as agreed. Years ago, this was not always the case. In the case of drum-to-hopper the Pharmachem way, our QA/QC procedures are state of the art, so our customers have a lot of confidence when purchasing multi-ingredient formulations from us.

How well does your typical customer understand, at the start, the needs and challenges of their own blending project?

Langhorn: Most of our clients have a great understanding of their product and are familiar with some form of blending. However, they may not be familiar with all the blending options. Our goal is to make them aware of their options and potentially offer a way to improve their product, process, or efficiency.

Tricarico: It really depends. While our business tends to focus on existing brands that know their ingredients and have a solid understanding of how the expectations and realities of supplement manufacturing can differ, we also work with brands that are entirely new to industry. It’s not uncommon for those who aren’t as well versed in the industry “ins and outs” to provide longer and more challenging “grocery list” formulas that require additional experience and exceptional customer service to bring to market.

McCrimlisk: All projects as well as all customers are different and unique. This being the case, we try to overload the front end with our requirements so there is a clear mutual understanding of expectations from the start.

Why is it so important for customers (the brand marketers) to have a clear vision of what their project’s needs are and what their end goals are for the product and the process? What are the most important issues companies should think about when determining the needs of their project?

Langhorn: Typically, a customer will have made a product that meets their expectation or close to it before we can assist with recommendations. Knowing how that product was made and the ultimate goals will give us a starting point in the process of identifying the best mixer candidates.

Tricarico: The clearer the vision from the outset, the easier a project can be executed. A well-defined list of specifications, which are established and discussed up front, will almost always help manufacturers to avoid potential hurdles and unanticipated costs.

McCrimlisk: Many marketers do not have this deep understanding of how good their product can be—how, if properly put
Customers avoid having leftover balances or only purchase what they need or are using. This saves on purchasing costs, and they is saves on purchasing costs, and they
in their batch size with no partials left in the
purchasing individual ingredients. We ship
plex blends from Pharmachem rather than
from purchasing their multi-ingredient com-
panies factor into their projections when determining whether or
not they can afford to create their dream blend?

Tricarico: One of the simplest ways to mini-
imize the chance of "surprise" costs is to clearly
and effectively communicate all of your prod-
uct specifications at the start of the manufac-
turing process. Unanticipated costs can also
result if a formulation proves more difficult to

likewise, a good manufacturing partner
ness that are always worth considering.

McCrimlisk: Many of our customers benefit
from purchasing their multi-ingredient com-
pact blends from Pharmachem rather than
purchasing individual ingredients. We ship
in their batch size with no partials left in the
warehouse. This saves on purchasing costs,
testing costs, and inventory costs, and they
only purchase what they need or are using.
Customers avoid having leftover balances or
stubs of ingredients without a use.

What questions should brand
marketing teams ask their contract manu-
facturer? Conversely, what
questions should the contract manu-
facturer ask the brand?

Tricarico: This happens to be one of our
favorite topics to discuss with brand own-
ers. Any willingness to ask questions as a
brand owner is a tremendous first step.
Likewise, a good manufacturing partner
should be proactive and have questions for
you. While there’s no single way to go
about asking questions, there are certain
staples that are always worth considering.
These include questions concerning the
manufacturer’s history, their manufactur-
ing capabilities, who they normally work
with, details about the members of their
team, and their strategy for helping clients
bring products to market.

What kind of advancements are
equipment suppliers making to take
blending/mixing capabilities
to the next level?

Langhorn: Most of the advancement is in
the form of control systems to ensure the
batch process is consistent, ingredients are
added in the correct quantities, and all the
relevant data is accessible.

What kind of testing should com-
panies ask to be done (or be
doing) to test the quality (and
reproducibility) of their blends?

Langhorn: We see clients bringing projects
in house when there is great concern over
production timing and the need for flexibility.

McCrimlisk: Companies should concen-
trate on doing what they do best and on
maximizing their own internal profit cen-
ters (producing tablets, capsules, food
bars, etc.) and minimize cost centers. Even
manufacturers that make their own tablets
don’t make money on material processing:
they make money on making tablets. That’s
where we come in, as the front end to their
successful business.

For companies looking to pur-
chase a blender/mixer, is there
such thing as a one-size-fits-all
blender or blending solution?

McCrimlisk: We have invested in our QA/
QC infrastructure so significantly over the
years that our partners/customers typically
use our standards and methods. But, we’re
open to collaborating so that we’re always in
sync with theirs, even in test methods and
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Contract manufacturers have their finger on the pulse of the natural products industry in ways that few others do. They often help finished product makers execute line extensions and new launches months, even years, before the rest of us see them. At the other end of the spectrum, contract manufacturers hear about the end of product lifecycles well before discontinuation notifications are disseminated.

To get their take on what 2018 may hold for the natural products industry, Nutritional Outlook spoke politics and trends with several industry contract manufacturers. Which way may the winds of change be blowing, and why?

Tax Time
In 2018, flexibility and adaptability will be as important as ever for manufacturers that want to stay abreast of the shifting political and regulatory landscape. Chief among these shifting plates are the new Republican-created Tax Cuts and Jobs Acts; the potential effect of a less-funded FDA on plant inspections, recalls, warning letters, and the New Dietary Ingredients (NDIs) notification process; and the retirement of industry champion Senator Orrin Hatch (R-UT).

Regarding the first item on the list, Kathy Paffendorf, sales account executive, Pharmachem, a division of Ashland (Kearny, NJ), says that the sweeping $1.5 trillion tax bill signed into law last December is sure to affect contract manufacturers.

Proponents of the bill have touted its benefits for corporations and manufacturers—namely, significant tax cuts for corporations and less complex investment purchasing guidelines.

And this new tax law, Paffendorf says, will have some impact on manufacturers in the dietary supplements industry—though how big remains to be seen. She explains: "With companies now allowed to purchase equipment and write off the investment within the same year, I would expect that those [contract manufacturers] who were thinking about expansion would take the leap and take advantage of this opportunity. This would have a major impact for industry growth."

Might upgrades lead to faster production timelines, additional capacity, increased innovation, and overall industry growth? Only time will tell.

FDA’s Way
Some industry growth may, however, be potentially diminished by a slower NDI process. William Solomon, CEO, Stern-Maid America (Aurora, IL), says that as the dietary supplements industry has experienced growth in the past few years, so too have regulatory efforts and crackdowns. The FDA’s NDI notification process, he says, is one such measure, though he notes that “how exactly this will be implemented and enforced remains to be seen."

The newest version of the NDI draft guidance was released in 2016, and with it came about as many questions as there were answers regarding terminology and how the process will be implemented. In its first iteration in 2011, the draft guidance stirred up no shortage of hubbub. An August 2016 revision was slightly better received, but many in the industry came away from even the revised guidance with a sense of unease, and visions of a slowed-down and costly NDI process to come.

Best Formulations’ (City of Industry, CA) CEO Eugene Ung points out that while the current administration may be slightly more pro-supplement than others, the FDA’s budget was slashed as well, to the tune of $40 million, “which means the Office of Dietary Supplement Programs (ODSP) is also underfunded. This may result in slower FDA actions, such as with issuing new NDIs.” Time is money.

And, with FDAs eye trained on good manufacturing practices (GMPs) compliance, manufacturing firms are going to have to step up. Says Steve Holtby, president and CEO, Soft Gel Technologies, Inc. (Los Angeles): “In order to anticipate the future needs of customers, contractors need to be proactive by advising customers of the implications of the FDA GMPs for dietary supplements. GMP compliance will help the dietary supplement industry build trust with consumers.”

As we wait and see what regulatory changes may roll out under an administration that promised deregulation, one of the best ways to deal with the uncertainty may be vigilance. Says Paffendorf, “The regulatory
environment is constantly changing and we need to stay ahead of the latest revisions and enforcement.”

People Watching
Of Hatch’s retirement, which marks the end of a 40-year-long Senate career, Paffendorf says: “We need more supporters of our industry in Congress. We need to pursue significant efforts to educate our Congresspeople on industry efforts for improved safety standards, labeling, and quality.”

On the other hand, many industry experts agree that the Trump administration appears to be decidedly more pro-supplement than the previous administration. De-regulatory inclinations aside, some other factors may work in the industry’s favor in 2018.

Case in point: Last May’s confirmation of Scott Gottlieb, MD, to the position of FDA Commissioner. Gottlieb’s appointment was met with approval from industry associations like the Council for Responsible Nutritional (Washington, D.C.) and the Natural Products Association (Washington, D.C.), which said that Gottlieb understands the supplements industry, supports product integrity, and is committed to enforcing current industry regulations.

What Consumers Want
While the regulatory waters keep on rolling well into 2018, it’s as important as ever for manufacturers to keep their eyes on the consumer. Fortunately, what consumers are looking for aligns (for the most part) quite nicely with the increased emphasis on regulatory enforcement. Says Shaheen Majeed, president, Sabinsa Worldwide (East Windsor, NJ), "Transparency is in the minds of consumers today, as labels on many popular products on the shelf reflect. Transparency can only happen if both supplier and contract manufacturers talk the right language to each other."

He adds that "scientific validity is also growing with the consumer base; therefore, contract manufacturers that are helping to create brands that will reach the mass market must be aware of this and ensure the science is proper." Cutting corners, if ever it was an option, certainly isn’t anymore.

SternMaid’s Solomon agrees: “Consumers expect consistent taste and appearance in their favored products, as well as a continual stream of diversity. If a product fails to meet consumer standards, they will quickly find an alternative. For contract manufacturers, this means focusing on quality, reproducibility and operational flexibility.”

Aside from more traceable products, consumers also have their eyes on a few key ingredients. Some ingredients that experts interviewed for this story say will be big with consumers in the coming year include probiotics, curcumin-based products, general wellness products, proteins both alternative and familiar, oils, and collagen. But while these ingredients are riding a wave of increased popularity that’s been building for a
few years now, another ingredient that companies are keeping an eye on this year is cannabidiol (CBD) oil. Success of the latter as a dietary supplement ingredient, however, remains to be seen.

**Wait and CBD**
Holtby says that CBD may be one of the biggest ingredients to watch in 2018, depending, of course, on how its legal position evolves. "If CBD emerges as a legal supplement," he says, "it would have a far-reaching effect for the industry since it possesses health benefits."

Currently, 29 states plus the District of Columbia have legalized cannabis to some extent, while eight states plus D.C. have legalized recreational marijuana use. Strictly speaking, CBD is not the same as its cousin cannabis. While both cannabis and hemp contain CBD, hemp has much higher levels of CBD than of tetrahydrocannabinol (THC), but with cannabis, the reverse is true.

Holtby says that although California recognizes marijuana—both medical and recreational—as legal, and CBD products are covered by those same medical marijuana legal protections, "the legal status of CBD oil products remains confusing since the U.S. Drug Enforcement Administration published a rule that all cannabis extracts, including CBD, are considered Schedule I controlled substances."

Confusion over the legal status of CBD oil is causing companies like Soft Gel to hit the pause button on CBD. But, he notes, "if CBD emerges as a legal supplement, it would have a far-reaching effect for the industry since it possesses health benefits," which purportedly include anti-inflammatory and tumor-fighting benefits, as well as managing nausea and anxiety, among many others.

**Sustainability and Traceability**
Regardless of CBD's potential in the dietary supplements market—or any other ingredient, for that matter—in 2018, manufacturers will sink or swim depending on traceability and sustainability. Obviously, deeper regulatory scrutiny will make this increasingly imperative. Plus, consumers are more informed than ever before. Thus, notes Sabinsa's Majeed, "a supplier that is not disclosing specifics about their proprietary ingredient or blend will not make it very far with consumers."

And it just makes sense from a business perspective. Holtby says that Soft Gel has made sustainability a key aspect of its business. "Depletion of natural resources has become a common concern," he says, "which is why lean manufacturing processes have replaced the methods of the past. Lean manufacturing and green thinking, otherwise known as supply chain environmental management, are mutually beneficial."

Other companies can benefit from this line of thinking, he adds, because "in the future, as the cost of material and energy continues to increase and becomes a larger component of the cost of manufacturing, organizations will need to adopt sustainability strategies."

**This Is a Test**
The issue of adulteration, inextricably linked to traceability and transparency, has likewise seen no shortage of press in recent years. From botanical brouhahas to sports nutrition adulteration, the issue of tampered-with ingredients looms large over the industry. While careful and conscientious manufacturing firms have always been responsible about ingredient sourcing, cleaning out the bad actors is now an industry imperative.

But on whose shoulders should the burden rest? Sabinsa's Majeed says that while many contract manufacturers shrug testing off to labs, "that's not how it should work. Contract manufacturers are part of the problem and they can be a great solution as well," he states. "Contract manufacturers must get involved in the testing process; they don't need a major laboratory setup, but should have the right [people] to discuss and evaluate the outcomes."

He adds that the biggest hurdle to ensuring that manufacturing remains on the up-and-up is pricing: "[Pricing] is sadly the first thing that gets many in the supply-chain in trouble. It's so obvious, though—if you're selecting the cheapest ingredient without a proper set of quality tests, you're asking for trouble."

Majeed says that not all tests are the same, however, so it's important to ensure that labs are not only testing thoroughly, but testing "the right things in the right ways."

For example, he notes, a 95% curcuminoids blend can be adulterated with synthetic curcumin, and no tests or lab work will be able to determine that synthetic component. Instead, the blend should be sent to a lab that does carbon dating.

SternMaid's Solomon, meanwhile, explains that while quality testing in the manufacturing process has become more sophisticated in recent years, contract manufacturers have been obliged to invest in new technology and education for both the company and its customers. And this, he adds, is an essential component of doing business in the supplements industry today. "Today's contract manufacturers not only have to comply with cGMP 21 CFR Parts 110 and 111, but they must also understand the regulatory policies of the FDA and the FTC," he explains. "This translates into a contract manufacturer knowing and advising clients continually throughout their relationship, as opposed to just fulfilling orders."

While there's undoubtedly still work to be done on the quality control front, contract manufacturers appear to be meeting the challenges that come with technological and regulatory developments head-on. Says Ung: "We are getting many more requests from our customers for additional testing. Heavy metals and pesticides testing, he adds, are just two examples of the kinds of supplementary testing companies may need to consult.

**A Clear Path Forward**
If it seems as though there are a million things to keep in mind to make both consumers and FDA happy, Majeed offers a solution: "Instead of pricing shopping, get to know your suppliers. You don't have to cut out brokers, but leverage them to get to know suppliers better. This is not rocket science." He adds that contract manufacturers have both a responsibility and right "to ask about the source and how ingredients have been handled and processed. In fact, they have every right to audit as well."

But even so, sometimes the surest way to conduct good business is to stay away from adulterated materials and dodgy suppliers. As Paffendorf puts it, "A conservative approach is always better."
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NAMING NAMES in Immune Health
An update on branded immune-support ingredients.

BY KIMBERLY J. DECKER

What’s in a name? For branded immune-support ingredients, the answer may be: quite a lot. After all, you can’t fault foggy-headed consumers for letting their eyes glaze over at the indistinguishable bottles of C, zinc, and Echinacea crowding immune-supplement shelves. In such an environment, any ingredient that can shout above the din is bound to gain an advantage.

But brand backing brings more than just name recognition; it can also mean having the full support of a marketing and research team to help your product—and the branded immune-health ingredient it contains—stand out even brighter.

As Mike Bush, CEO, Ganeden (Cleveland), puts it, “Consumers are taking a more proactive approach to their health, reading labels more closely and doing research on specific ingredients fortified into products.” They take these measures because they’re looking for quality, particularly when addressing their and their family’s immune health. Says Bush, “Functional immune ingredients that are recognizable and have research showing health benefits reassure these consumers.” And more often than not, it’s a brand name that sparks that recognition.

Educational Advantage
Branded health ingredients are nothing new to dietary supplements, and that’s as true of immune-support formulations as it is of any other wellness category. But, says Elyse N. Lovett, MBA, MS, marketing manager, Kyowa Hakko USA, Inc. (New York City), “There’s definitely more recognition among consumers for branded immune support lately.” Why? “I believe that consumers want to know where their ingredients come from and why they work,” she says. Social media’s sway, as well as what she calls “Millennial marketing and ‘influencer’ marketing” offer branded immune-support ingredients the opportunity to make a name for themselves—literally—and let consumers educate themselves on the ingredients that are out there.

The availability of these educational resources is a core advantage of brand backing. “Branded ingredients help consumers understand exactly what a product is fortified with,” Bush notes, “and allow manufacturers to show specific research and information on those ingredients, which generic ingredients can’t always provide.”

Prove It!
Lovett agrees. “Most branded ingredients are backed by significant human clinical research,” she says. And clinical research that produces statistically significant results, especially in the immune category, is essential to making efficacy claims, “as well as claims that the consumer understands.”

Such has been the case with probiotics, which have witnessed a burst in popularity not just for the digestive benefits that established their reputation, but also for newly elucidated effects on immunity. Nonetheless, the probiotics category comprises a broad and diverse range of strains, and as Bush says, “all research and health benefits are strain specific.”

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For example, his company’s GanedenBC30 (Bacillus coagulans GBI-30, 6086) ingredient has research demonstrating its immune-support benefits. Bush says, “while other probiotic strains may not have any effect on the immune system at all. So, we always stress the importance of strain specificity and branded options.”

As Lovett says, “Research is always top of mind with any ingredient. But branded ingredients backed by multiple human clinical research studies that can support efficacy claims will have huge benefits.”

And if the company spearheading that research is also communicating scientific findings effectively, the more data the better. Notes Lovett, “Most companies offer marketing advantages to branded ingredients. Consumer awareness is huge, so getting the brand name out there into the market and into the right places and to the right demographics is key.”

**Probiotic Foothold**

In the immune-health arena, we see branding’s returns accrue to multiple ingredients, gaining them the foothold they need to carve out a place for themselves.

Consider, once again, what’s happened with probiotics. “Consumers originally associated probiotics with digestive health,” Bush points out. “But because 70% of the immune system is located in the digestive tract, there’s a growing understanding that probiotics can have immune health benefits, as well.” Strain-specific research shows that strains like Ganeden’s Bacillus coagulans “do support immune health, leading to an increase in product launches promoting immune health instead of just probiotics or digestive health.”

The influx of new probiotic-fortified children’s products illustrates the difference that branding makes. As Bush points out, “Probiotics’ immune health benefits resonate strongly with parents.” Indeed, Ganeden’s 2017 SSI consumer survey found that 87% of parents would purchase a product for their children were it fortified with probiotics.

Thanks to their interest, Bush says, 2017 saw a number of BC30–fortified product launches geared toward children, including NurturMe quinoa infant cereal, ancient grain cookies and quinoa squares, Feel Better Pops popsicles, Little Duck Organics fig bars, Farm&Oven bakery bites, and Sneakz vegan protein powder.

For consumers farther up the age spectrum, Megan De Stefano, global probiotics marketing leader, DuPont Nutrition & Health (Wilmington, DE), points out that her company’s Howaru Protect Adult (Bifidobacterium lactis BI-04) is “clinically documented” to help active adults stay healthy, and that it’s optimized to maintain natural immune defenses.

In a recent clinical trial, researchers had 100 healthy adults supplement with the probiotic or a placebo daily for four weeks, after which they applied rhinovirus to the
subjects’ nostrils to induce mild colds. Over the five days following application, subjects in the probiotic group had less rhinovirus in their nostrils than those in the placebo group and exhibited changes in their innate immune response that didn’t occur with the placebo. The conclusion, says De Stefan: the probiotic supports the immune system in the nasal passages and delays the onset of respiratory tract illness versus placebo.

Other Options
Branded probiotics aren’t the only immune ingredients getting attention. More than a dozen clinical studies back the ability of the Wellmune brand of proprietary beta 1,3/1,6 glucan from baker’s yeast to strengthen general immune health regardless of age, says Don Cox, senior vice president of research and development for the brand (which is distributed by Kerry Group).

A recently published study that used exercise stress to modulate the immune system of adult subjects taking either the beta-glucan or a placebo found that the Wellmune-consuming participants maintained elevated levels of cytokines during exercise stress, significantly higher circulating monocyte and T cell levels, and superior recovery capability compared to the placebo participants, Cox says—all of which suggests that the supplement gave their immune systems a boost in avoiding common post-exercise suppression.

“The findings are also consistent with others published on the ingredient about its general ability to improve immune health, reduce the incidence of upper respiratory tract infection (URTI) symptoms and improve the overall sense of wellbeing in those undergoing physical or lifestyle stress,” Cox says. “For example, a new pilot study published earlier this year in the clinical journal Nutrition shows that consuming Wellmune led to fewer URTIs and reduced the duration of URTI symptoms in older adults.”

For its part, Lovett’s company manufactures a branded glutathione supplement called Setria made using a patented fermentation process “that yields high quality and purity,” Lovett says—“key in any formulation.”

While its benefits run from detox to sports performance, it supports immune health not only as an antioxidant that protects cells from the stressors that make us sick, but also by helping our bodies maintain sufficient numbers of functioning T-cell lymphocytes, and by stimulating the production and activity of natural killer (NK) cells, according to the company’s website.

These examples by no means constitute an exhaustive list of the branded immune ingredients out there—which means that manufacturers not only have plenty of options to choose from, but also face the task of wading through them all.

But they don’t have to do it alone. When auditioning branded ingredients, “We recommend that manufacturers select a supplier that can provide marketing and formulation assistance, as well as research on all ingredient offerings,” Bush says. “The relationship between a manufacturer and supplier should be a partnership, with joint efforts in all steps of the launch process—from fortification to educating consumers.”

Kimberly J. Decker writes for the food and nutrition industries from her base in the San Francisco area, where she enjoys eating food as much as she does writing about it.

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More than 100 million U.S. adults have diabetes or prediabetes, according to the Centers for Disease Control and Prevention. About 9.4% of the U.S. population (or about 30.3 million people) have the disease and another 84.1 million have prediabetes.1 With diabetes reaching epidemic proportions, it’s no surprise that consumers are looking to nutraceuticals for blood sugar support—whether they’ve been diagnosed with the disease or not.

“Interest in blood sugar management ingredients has increased over the last couple of years,” says Patrick Luchsinger, marketing manager of nutrition, Ingredion Inc. (Westchester, IL). “Maintaining optimal blood sugar levels is not only important for people with diabetes, but also for the general population as well.”

“Interest in blood sugar management ingredients has increased over the last couple of years,” says Patrick Luchsinger, marketing manager of nutrition, Ingredion Inc. (Westchester, IL). “Maintaining optimal blood sugar levels is not only important for people with diabetes, but also for the general population as well.”

Plus, says Jim Komorowski, chief scientific officer, Nutrition 21 (Purchase, NY), it’s not just consumers who are opening their minds to supplements for blood sugar health: “Over time, there has been some turnover in the traditional medical community allowing for an upsurge of homeopathic or more naturally inclined physicians, who are open to exploring nutraceuticals as a recommended option for their patients.”

In response, the dietary supplement industry is taking a multi-pronged approach to addressing blood sugar support. While some ingredients are helping consumers achieve healthier body weights, others support normal insulin function, and still others prevent oxidative stress.

Indeed, the newest research examines the impact nutraceuticals can have on a range of consumers—from those who are overweight and, therefore, at risk of developing diabetes later on, to those with a prediabetes or type 2 diabetes diagnosis. “Manufacturers have a unique opportunity to formulate supplements that can help on two fronts: preventing metabolic syndrome and diabetes in those at risk, and controlling the disorders in those who already have them,” says Steve Holtby, president and CEO of Soft Gel Technologies Inc. (Los Angeles).

Recent Research
Some of the latest research in the healthy blood sugar market examines the use of natural ingredients in foods for improving metabolic function.

Researchers recruited 18 overweight but otherwise healthy adults to consume either muffins with the ingredient or control muffins over the course of six weeks. Those who consumed the functional ingredient for six weeks had decreased blood glucose concentrations compared to baseline; a decrease in blood leptin concentrations during the two hours after a meal; and, an increase in fasting blood peptide YY (associated with reduced hunger). Together, these data suggest that the ingredient may improve metabolic functions related to appetite regulation.

A separate study examined the long-term effects of consuming bagels fortified with Hi-Maize on fasting and postprandial glycemic markers in adults with an increased risk of type 2 diabetes.3 This was a double-blind, placebo-controlled, randomized crossover dietary intervention clinical trial consisting of two eight-week dietary intervention periods separated by a four-week washout period. Researchers measured insulin resistance and beta cell function using fasting measures of glucose and insulin, and conducted an oral glucose tolerance test to assess glycemic control. Participants either consumed bagels fortified with 25 grams of Hi-Maize or a control bagel made with wheat flour.

The newest research on blood sugar nutraceuticals is aimed at both at-risk and diabetic individuals where they shop: in the functional food aisle.

BY MELISSA KVIDAHL
Results showed that, among those who consumed the fortified bagel, post-treatment insulin resistance was significantly lower, and post-treatment pancreas beta-cell sensitivity improved. Thus, investigators concluded that the consumption of high-amylose resistant starch improves glycemic efficacy by reducing the amount of insulin required to manage postprandial glucose while also improving fasting insulin sensitivity.

These findings did not go unnoticed. "In December 2016, the FDA authorized a qualified health claim for high-amylose maize resistant starch and reduced risk of type 2 diabetes, while ensuring the claim was appropriately worded so as not to be misleading," says Luchsinger. "These claims can be used on the packaging of conventional foods, as defined by 21 CFR 101.14. Such products include bakery items, nutrition bars, cereals and pastas" as well as functional snacks.

Functional fibers, too, have been studied for their blood sugar benefits for those at risk. Two studies completed in 2016, conducted by a team at Imperial College London and funded by Diabetes UK, show three major benefits of a branded enriched inulin ingredient (Orafti Synergy1 from Beneo Inc., Parsippany, NJ) in reducing the risk of diabetes.

For the first study, which took place over 18 weeks, researchers recruited 20 prediabetics to consume 30 grams of the branded ingredient daily. A control group consisted of 19 prediabetic individuals, who consumed a non-fermentable fiber for the same period of time. While both groups lost about 5% of their body weight over the course of the first nine-week period, the treatment group showed a sustained and significantly greater weight loss in the following nine weeks. Researchers speculate that it was the significantly greater reduction in food intake that was observed: after nine weeks of supplementation, the treatment group consumed about 270 kcal less in an ad libitum meal test.

Ultimately, researchers say the ingredient led to a greater reduction in body fat percentage, with significant results in liver fat—a risk factor for metabolic diseases—and soleus muscle fat.

The second crossover design study confirmed these findings, but also found improvements in insulin response. In this study, 34 participants with impaired fasting glucose and/or impaired glucose tolerance consumed up to 30 grams of Orafti Synergy1 daily, or a non-fermentable fiber as control. In prediabetic participants with impaired fasting glucose, supplementation significantly reduced fasting insulin and insulin resistance. A meal tolerance test in a subgroup of 13 participants further revealed that the ingredient enhanced early insulin secretion after a meal without changes in total insulin secretion, and increased early GLP-1 secretion in comparison with the control.

These findings have the potential to transform how brands approach their functional food offerings. "Beneo’s chicory root fibers help to increase the fiber content of food and beverage products invisibly, which means that taste and texture remain the same or are even improved, while adding health benefits to the products," says company president Jon Peters.

In 2017, additional findings revealed that chicory root fibers can significantly lower blood glucose response when used to partially replace sugars in a food product. Researchers compared the blood glucose and insulin responses of healthy individuals eating yogurt drinks that were identical in composition except for one detail: one variety contained full sugar, and the other had replaced some of the sugar with Beneo’s Orafti GR or inulin.

First, researchers tested the effects of a 250-g (8.8-oz) yogurt drink in which 20% of the sucrose was replaced with Orafti GR. Not only was a 14% reduction in blood glucose response measured, but insulin response was also reduced by 17%. Next, they tested a 110-g (3.88-oz) serving of fruit jelly, in which 30% of the sucrose was replaced. This time, a 16% reduction in blood glucose response was recorded, and the insulin response was reduced by 40%.

"The company’s inulin and oligofructose, derived from chicory root, contribute to a lower glycemic response of food and drink products because they are not digested in the human digestive system and thus no glucose is released into the bloodstream," says Peters. "Replacing high-glycemic ingredients (e.g., sucrose, glucose and glucose syrups, maltodextrin) using Beneo’s dietary fibers that lower the blood glucose response of the final product will add a valuable fiber source at the same time."

While research and development intended to support healthy blood sugar before diabetes onset is important, the latest findings on the supplements found in Cepham Inc. (Piscataway, NJ) are centered around lowering the sugar levels of individuals diagnosed with type 2 diabetes.

Published in Food & Nutrition Research in 2016, one study evaluated the efficacy of 500 mg of Cepham’s branded fenugreek seed extract (Fenufork) over the course of 90 days. Researchers recruited 154 subjects with type 2 diabetes, and measured their body weight, blood pressure and pulse rate, as well as fasting and postprandial plasma sugar, glycosylated hemoglobin, and fasting and postprandial C-peptide levels. What they found was that the branded fenugreek extract caused significant reduction in both fasting plasma and postprandial blood sugar levels. About 83% of the supplement group reported decreases in fasting plasma sugar levels as compared to 62% of the placebo group. And 89% of the subjects in the supplement group demonstrated a reduction in postprandial plasma sugar levels, while just 72% in the placebo group did the same.

"Because diabetes is considered a disease-state, nutraceuticals can never really claim to treat it, or serve as a treatment for unhealthy blood sugar," says Komorowski. "However, due to increasing scientific evidence and general consumer interest, nutraceuticals are proving to be an option to at least support healthy blood sugar levels."

Melissa Kvidahl is a freelance journalist and copywriter specializing in the health and wellness industry.

References at www.NutritionalOutlook.com/blood-sugar/blood-sugar-research-targets-functional-food-applications
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Ready for GMO 2.0?

Even as non-GMO certified products continue to skyrocket in popularity, new gene-editing techniques are causing ripples in the gene pool.

BY JENNIFER PRINCE, ASSOCIATE EDITOR

Over the past few years, the conversation around non-GMO has evolved from fringe topic to the centerpiece of many a natural product line—and consumers are eating it up. Megan Westgate, executive director, the Non-GMO Project (Bellingham, WA), points to data from Nielsen indicating that in 2016, 50% of consumers surveyed in North America said they actively avoid GMOs. In that same year, she adds, Consumer Reports found that as many as 72% of consumers think it is important to avoid GMOs, with 40% reporting that they look for non-GMO labels to help them make purchasing decisions.

In spite of the growing prevalence of non-GMO verified products, new genetic engineering techniques—or “GMO 2.0”—may muddy the waters.

Transparency Counts

Westgate says today’s consumers want to "shop their values and are increasingly demanding greater accountability and transparency from the companies that produce and supply their food and supplements." She adds that shoppers are more likely to make purchasing decisions that not only benefit their health, but also the livelihood and health of the farmers and animals that provide them. All this, she notes, has led to more companies seeking third-party certifications.

The entire supply chain is evolving in response to the uptick in interest in non-GMO. Steven Taormina, business unit manager at NSF International’s Consumer Values Verified division (Ann Arbor, MI), says "non-GMO verified ingredients continue to become more readily available throughout the supply chain, which is global." Certainly, it’s easier than it has ever been to reap the benefits of a non-GMO label claim.

By the Book

For companies keen on earning the butterfly seal from the Non-GMO Project Verification Program, Westgate says they must undergo an annual evaluation with one of the Non-GMO Project’s independent technical administrators (TAs). She explains, "The TAs analyze ingredient statements from suppliers, ensure that proper material handling protocols are in place, and determine whether ingredient testing and/or facility inspections are needed." Once a product is determined to be compliant, the TA issues a certificate specifying that the product is eligible to feature Non-GMO Project Verified mark.

NSF International, for its part, offers Non-GMO Project Verification as well as the organization’s own Non-GMO True North Certification. As Taormina explains: "Both programs require an application review, which includes specific product recipes, ingredients, and manufacturing practices. Depending on the risk, some manufacturing facilities may be inspected. Both programs ensure the integrity of the products’ non-GMO ingredients with a maximum allowable GM content of 0.9%.”

According to Taormina, NSF International’s verification programs are currently the only two programs accepted by Whole Foods Market's standards programs to make a label claim that a product is non-GMO. It may seem rigorous, but that’s the price of doing business with health- and environmentally conscious consumers in 2018.

GMO 2.0

Plus, there are bigger fish to fry. Westgate states that the growing threat of GMO 2.0, which includes genetic engineering techniques like synthetic biology, gene-editing, and Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR), among others, is a supply-chain issue to keep an eye on.

Taormina agrees: "CRISPR and other ‘gene-editing’ technologies will introduce many new varieties of crops in the coming years." He says apples and potatoes, for instance, have been modified to "silence" the expression of certain genes for various purposes.

But GMO 2.0 isn’t your run-of-the-mill gene-editing. Westgate adds, "Unlike traditional genetic engineering, these techniques are often not ‘transgenic,’ meaning the products of GMO 2.0 don’t contain genes from multiple species (e.g., a mix of bacteria, viruses, animal and plant genes, etc.) the way ‘traditional’ GMOs do.”

This is a big problem, she adds, because while some products of these technologies may not be transgenic, “they are still products of biotechnology as defined by the Codex Alimentarius…the Codex definition is the same one used by the Non-GMO Project. Besides the fact that many products of GMO 2.0 are being sold as ‘non-GMO,’ an additional supply chain challenge with these types of ingredients is that testing labs have not yet developed commercial tests for them.”

So, how can manufacturers navigate such a hard-to-pin problem? "Biotech companies are making a concerted effort to distance themselves from the consumer and manufacturer rejection of GMOs by claiming that these new techniques are not actually genetic engineering,” says Westgate. “Until such tests are developed, the Non-GMO Project Standard requires affidavit evidence for inputs at risk for being products of GMO 2.0. In this way, we are playing a leadership role in helping to protect the supply chain from unchecked contamination by these ingredients. This will support manufacturers in meeting consumer expectations, ensuring that the ingredients they are using are truly non-GMO.”

Navigating the path forward is easier said than done. Notes Taormina: “How the USDA and other global government agencies approach the approval and labeling of these so-called GMO 2.0 crops will have a large impact in 2018 and beyond.”
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