

by Linda Milo Ohr

## A Thirst for Wellness

With health and wellness at the forefront of many consumers' minds, beverages have evolved into applications that do more than just quench thirst. Today's functional beverages address various health concerns, satisfy myriad eating lifestyles, and come in various formats to provide convenience as well as tasty drinking experiences.

This past November at SupplySide West, attendees witnessed the versatility of beverages in promoting health and wellness. Drink shots, plant-based beverages, and beverages promoting natural energy and digestive and immune health were some of the functional beverages observed. Here is a look at trends in functional beverages and some of the ingredients that are used to promote wellness in these functional drinks.

### Plant-Based

Plant-based eating has touched just about every food and drink category, from prepared meals and snacks to desserts and beverages. DuPont Nutrition & Health recently announced results of a study looking at plant-based eating. Conducted with HealthFocus International, the research looked at the eating habits of more than 1,000 U.S. consumers. It revealed that 52% of U.S. consumers are eating more plant-based foods and beverages, while the number rises to two-thirds (65%) globally.

"There is a bright immediate future for this megatrend," says Greg Paul, marketing leader, beverage industry, at DuPont Nutrition & Health. "There is a seismic shift occurring in eating habits globally,

creating a significant market opportunity. Most important, our research reveals that for most consumers, this has moved beyond experimentation into a permanent change brought on by health, lifestyle, and social factors." The research also indicated that almost 60% of respondents said that their change to plant-based food was permanent or that they hoped it was permanent. In addition, all consumer segments in the model—Health Helpers, Weight Strugglers, Health Wise, Taste Driven, Good Life, and Just Food—said that eating plant-based food makes them feel healthier.

At SupplySide West, DuPont Nutrition & Health highlighted its plant-based proteins for beverages and showcased its new *Danisco VEGE Cultures*, specially formulated for a variety of plant-based fermented products. Using its knowledge of the plant bases used by the food industry, the company selected the best microorganism strains for optimizing the fermentation profile and taste of each plant source. The cultures are composed of different species, including *Lactobacillus acidophilus* NCFM and *Bifidobacterium lactis* HN019. At the show, *VEGE Cultures* were featured in *H<sub>2</sub>Oats*, a fermented oat beverage.

You can't discuss plant-based beverages without mentioning plant proteins. DuPont also introduced *TRUPRO 2000 Pea Protein* for high-protein powdered or ready-to-drink (RTD) beverages. The free-flowing powder is 83% protein (dry basis) and derived from North American-grown yellow peas that are naturally not genetically modified. The new pea

protein was featured in a *Cocomix* beverage concept that contained 22 g of protein/serving.

Pea protein-fortified beverage concepts from Axiom Foods quenched the thirsts of attendees at SupplySide West. These included *Not-Your-Usual Milk* and *Everything but the Kitchen Sink Shakes*, both

*The number of plant-based beverages has increased due to consumers' desire to eat healthier.* © razerbird/iStock/Getty Images Plus



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made with *VegOtein* pea protein. *VegOtein* is produced from U.S.- and Canadian-grown non-GM yellow peas using a natural chemical-free water separation process. The ingredient is rich in iron and essential amino acids (it is especially high in lysine and arginine). The company says that the ingredient is often blended with rice protein to complete the amino acid profile, as legumes and grains have complementary amino acid levels.

NP Nutra featured its new *Organic Spelt Powder*, a complete protein plant source. Spelt grass is an excellent source of protein and dietary fiber and contains high levels of several B vitamins and minerals, including manganese, phosphorus, magnesium, and iron. NP Nutra also offers the organic, plant-based *NutraProtein Power Blend*, a specially formulated nutritional mix of plant-based proteins, essential amino acids, and other vital nutrients. With a protein content greater than 55%, *NutraProtein Power Blend* comes in two versions, *Greens* and *Chocolate*. The *Greens* formula contains pea protein powder 80%, sachinchi protein powder, brown rice protein 80%, alfalfa grass powder, barley grass powder, wheatgrass powder, hemp protein powder 45%, lucuma powder, and lo han guo. The *Chocolate* formula contains pea protein powder 80%, sachinchi protein powder, brown rice protein 80%, cocoa powder, mesquite powder, and lo han guo.

### Immunity and Digestion

Interest in immune and digestive health, both tied to gut health, is growing in the food industry. One way to deliver digestive and immune health benefits is through probiotics. The probiotics market was valued at nearly \$42.7 billion in 2016 and is projected to reach \$64 billion by 2022 (MarketsandMarkets 2017). According to a white paper published by Kerry, research shows consumers are willing to pay at least 10% more for a food or beverage containing probiotics (Kerry 2018). The results of the research show that 87% of parents and 61% of Millennials will pay more for the added benefit of probiotics, specifically when they are included in beverages.

*GanedenBC30* (*Bacillus coagulans*



**Blueberries work well as ingredients in beverages like teas, juices, and smoothies.** Photo courtesy of U.S. Highbush Blueberry Council.

GBI-30, 6086) from Kerry is one probiotic that lends itself well to a wide range of beverage types. More than 25 peer-reviewed, published papers demonstrate the probiotic's digestive wellbeing and immune health benefits. Because it is a spore former, it is much more resistant to the extremes of pH, heat, cold, and pressure used in nondairy food and beverage processing environments, including high-temperature/short-time pasteurization and high-pressure processing pasteurization. A natural shell also shields the probiotic from stomach acids until they reach the digestive tract where the environment is ideal for the probiotic to germinate and deliver its intended benefits. In addition to its digestive and immune health benefits, *GanedenBC30* also shows promise for additional health benefits, including enhancing plant protein digestion (Keller et al. 2017).

Kerry also offers *Wellmune*, a baker's

yeast beta-glucan that supports immune health. Mah et al. (2018) confirmed that the consumption of foods and beverages made with *Wellmune* is a promising strategy for reducing the severity and impact of upper respiratory tract infection (URTI) symptoms associated with intense exercise stress. Runners who consumed a beverage (250 mL/day) with *Wellmune* (RTD dairy-based beverage containing 250 mg of *Wellmune*) saw a 19% reduction in the severity of URIs compared to those in the control group. The runners who consumed the *Wellmune*-fortified beverage also missed fewer post-marathon workouts because of URIs and had a 10% decrease in total symptomatic days compared to those in the control group.

According to information from the U.S. Highbush Blueberry Council, blueberries are being formulated into fiber drinks, which are increasing in

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popularity. Consumers equate blueberries with antioxidant power and, consequently, readily accept them as an ingredient in almost any product. In addition to tasting good, fiber beverages that contain blueberries can be

proprietary natural immune support ingredient that is produced via a water-based extraction process from larch trees. It consists of the soluble fiber arabinogalactan and bioactive flavonoids.

### *You can't discuss plant-based beverages without mentioning plant proteins.*

positioned as containing natural antioxidants. Beverages formulated with whole food plant sources like blueberries supply natural antioxidants and other beneficial nutrients from the plants, which are most efficiently absorbed by the body.

#### **Beverages as Shots**

Arla Foods Ingredients featured a new protein beverage shot made exclusively with whey protein at SupplySide West. The product concept, *Protein Extreme*, packed 20 g of high-quality whey protein into a 100 mL, low-calorie serving. This demonstrated that it is possible to create high-protein beverage shots exclusively with whey protein. *Protein Extreme* was made with *Lacprodan HYDRO.365*, a high-quality whey protein hydrolysate. Developed to meet the needs of athletes and gym goers, it helps speed up muscle recovery after exercise due to its amino acid composition and fast absorption rate.

Lonza also showcased a beverage shot concept, *ResistAid Digestive Wellness Shot*. Beverage shots provide consumers with low-calorie, convenient drinks that have functional benefits. Lonza's beverage shot concept contained coconut water, which provides hydration, that was naturally flavored with lemon and ginger. The product concept contained 3 g of prebiotic fiber from *ResistAid* arabinogalactan. *ResistAid* is a

#### **Fortified Water**

Hybrid beverages are one of the top beverage trends for 2019, according to Watson (Watson 2018). In a recently published white paper, the company reports: "A hybrid beverage is a cross between two (or more) different beverage types. The leading hybrid beverage in the United States last year was nutrient-fortified water, followed by carbonated juice." Examples of hybrid beverages include juice-water blends, protein water, vitamin water, dairy-based energy drinks, and coffee-tea blends.

Fortified water is water with added benefits such as vitamins, electrolytes, or protein. The key to this beverage category is not only taste but the clean and clear appearance of the water. *Clear-E* is an example of an ingredient that Watson offers for clear beverages. It is a fine, free-flowing form of vitamin E spray-dried within a modified starch matrix. When mixed into a solution, *Clear-E* forms a micellar dispersion, producing a clear solution. *BetaClear* is another Watson ingredient that can be used in clear beverages. Watson has been able to eliminate the orange color of beta-carotene by producing a colloidal dispersion of beta-carotene and spray-drying it.

Protein isolates that maintain the clear appearance of protein-fortified water beverages are available. Arla's *Lacprodan*





**Staying hydrated when exercising** is important. Fortified waters are a trending beverage type. They contain additional nutrients like protein and electrolytes. © adamkaz/E+/Getty Images

**HYRDRO.clear** is a mildly hydrolyzed, acidified whey protein specially developed for use in formulating crystal-clear beverages. **Crystal Clear Protein Water** product concept made with **Lacprodan DI-9213** won the Foods Ingredients Europe 2017 award in the category Performance Nutrition Innovation.

### Natural Energy

Maintaining energy levels throughout the day affects just about everyone—from athletes in training and weekend warriors to students, stay-at-home parents, and those in the workforce. Manufacturers of energy drinks are now focusing on clean, natural sources of sustainable energy instead of straight caffeine.

Applied Food Sciences offers examples of some natural energy sources. **AMATEA** organic guayusa extract contains 20% caffeine and 30% chlorogenic acids. It comes from a leaf of an Amazonian plant, and it contains a unique blend of caffeine and polyphenol antioxidants, providing a clean, balanced energy. Preliminary findings suggest that **AMATEA** guayusa extract may help regulate the hormone epinephrine, according

to the company. Applied Food Sciences also offers **PurCaf** organic caffeine, a powdered extract sourced from 95% pure caffeine from green coffee beans.

**Bioenergy Ribose** from Bioenergy Life Science is a natural, functional ingredient that delivers a unique way to restore and sustain energy at the cellular level. Ribose is a naturally occurring carbohydrate already found in the body's cell structure. In addition to functioning as an energy source, it has also been shown to support heart health, help maintain healthy blood flow and circulation, deliver faster recovery pre- and post-workout, and promote healthy mitochondrial structure.

Derived from sugar beet, **Palatinose** from BENE0 is a fully digestible disaccharide-type carbohydrate composed of glucose and fructose. Because of its strong linkage, it provides carbohydrate energy in a more steady and sustained way, with less effect on blood glucose levels and insulin. It creates an improved metabolic profile with more stable blood glucose levels and a higher contribution of fat utilization in energy metabolism.

König et al. (2016) showed that

endurance athletes who preloaded carbohydrates by consuming a beverage made with **Palatinose** maintained a more stable blood glucose profile and higher fat oxidation, which resulted in improved cycling performance, compared to those in the control group. On average, the athletes who consumed the beverage containing **Palatinose** finished the time trial an entire minute faster and were able to pedal more powerfully in the final five minutes of the time trial, compared to those who consumed the control beverage. At the 2018 Health Ingredients Europe show, BENE0 featured **Palatinose** in a black currant sports drink, an energizing pink grapefruit-flavored water, and an almond chocolate drink. **FT**

*Next month's Nutraceuticals section will showcase ingredients used to formulate breakfast foods.*



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