

Full of Promise

For weight management, ingredient suppliers are talking satiety. Which ingredients fit the bill?

BY ALAN RICHMAN

Statistics compiled by the World Health Organization (WHO) show that worldwide obesity more than doubled in the years from 1980 to 2008. Nearly two-thirds of the world's population now lives in countries where overweight and obesity are silent killers.

The United States is the worst offender. In 2010, just one year ago, 80.5% of the male population 15 years of age or older was overweight or obese. For women, the figure was only slightly better—76.7%.

Can anything be done to stop us from supersizing ourselves into an early grave? Perhaps yes.

If one theme became clear from the research done for this article, it is that feeling full is very important to U.S. consumers. Therefore, satiety is a key objective in most products aimed at weight management.

Katherine Bond, director of business development for Irvine, CA-based Cyvex Nutrition, describes her company's SolaThin ingredient, introduced earlier this year, as a pure potato protein extract consisting of several low-molecular-weight proteins, including protease inhibitor PI-2. According to Bond, "PI-2 enables the release of cholecystokinin (CCK), a naturally occurring peptide clinically shown to produce a feeling of gastric fullness, and thus can help reduce food consumption up to 20% in reported results."

"SolaThin contains more than 90% protein content to promote a greater sense of satiety," she adds.

Kemin Health's Slendesta is also a natural potato extract. Derived from white potatoes, it is "a patented, safe, and natural satiety ingredient," according to Corey Jansen, product manager for the Des Moines, IA-based company. Standardized to its active component, PI2, Slendesta promotes the release of CCK. Once released, CCK travels through the blood targeting various organs, where it induces feelings of fullness and satisfaction. Satiety again.

Slendesta's satiety benefits, along with the satiety effects of another ingredient, InSea2, were recently examined as part of a randomized, double-blind, placebo-controlled study on Gly-Sea-Max, a branded dietary supplement by Douglas Laboratories.

The company promotes Gly-Sea-Max for supporting normal glycemic response, satiety, and fullness. InSea2, an ingredient from InnoVactiv Inc. (Rimouski, QC, Canada), is a polyphenolic algal extract said to inhibit digestive enzymes alpha-amylase and alpha-glucosidase.

The Gly-Sea-Max study was completed by 38 male and female volunteers. According to researchers, the active-ingredient group showed greater increases in satiety after consuming a meal, compared to placebo.

The Fear of Hunger

Jansen says the key to successful weight management is to help prevent dieters from feeling constant hunger pangs. "The feeling of hunger, or sometimes just the fear of feeling hungry, can cause many weight-management programs to fail," he explains.

"Calorie for calorie, research has shown that protein can help people feel fuller longer than carbohydrates or fats [can]," says Matt Pahnke, director of nutrition research for the Dairy Research Institute (DRI) in Rosemont, IL. He cites research showing that whey protein may lead to satiety by stimulating several gastrointestinal hormones that are thought to regulate appetite control in the brain. A side benefit: whey protein can help maintain muscle.

K. J. Burrington, representing the Wisconsin Center for Dairy Research at University of Wisconsin-Madison, an affiliate of DRI, says, "Because it is so easy to use in food and beverage applications, manufacturers are using the dairy protein in snack bars, beverages, flavored waters, smoothies, oatmeal, and coffee drinks."

Vikki Nicholson, vice president, U.S. manufacturing and ingredients marketing, U.S. Dairy Export Council, another DRI affiliate, adds, "Feeling full reduces cravings for snacks and helps consumers eat less; feeling full makes them feel satisfied and content."



Nicholson cites a 2008 study conducted by Dairy Management Inc., an umbrella organization for these dairy industry entities, in which two-thirds of consumers said it was extremely important or very important that a food or beverage make them feel full.

Whey is also at the heart of weight-management offerings from FrieslandCampina Domo, located in Paramus, NJ. William Martirano, technical sales manager, R&D, says the company's Hyvital whey hydrolysates are naturally rich in protein and low in fat, making them an "ideal ingredient to maximize any weight-management program."

In addition, says Martirano, "The main thing science is showing now is that a lack of weight management can cause disease such as diabetes and other health-related

issues. Weight management is not only desirable for appearance's sake, but, more important, for physical well-being and prevention of life-threatening illnesses."

Soy for Supper

Soy, not whey, is the protein of choice for Solae, of St. Louis, MO. Greg Paul, director of business development, says Solae offers soy protein isolates and soy protein concentrates in powdered and textured forms. They also are used for crisps, which commonly find their way into nutrition bars or are recruited for multigrain protein nuggets that also include grains of rice, barley, and oats.

Paul says soy is not only comparable to high-quality animal protein but is the only nutritionally complete source of vegetable

protein widely available. In one 2009 study, subjects following a so-called Eco-Atkins low-carbohydrate diet lost an average of 8.8 lb. Soy protein contributed a significant portion of the plant protein in the low-carbohydrate test diet, at 25 g of soy protein/day (nearly 25% of total protein consumed).

At Anaheim, CA-based Gencor Pacific, managing director R.V. Venkatesh adds: "Current weight-management science focuses more on satiety and on reducing abdominal adiposity. Weight loss per se has taken a backseat. The key issue is to avoid complications due to obesity. And that can be addressed by controlling eating and by controlling abdominal adiposity, which is indicated by waist circumference." The new

paradigm is “it’s the waist that matters, not the weight,” he says.

Stemming Hunger with Stems

According to Venkatesh, Gencor’s Slimaluma is a proprietary extract of the herb *Caralluma fimbriata*. Like hoodia, it is a succulent (not a cactus) that belongs to the *Asclepia-*

daceae family. In India, he says, many tribes make their living as hunter/gatherers. When their members go off into the forest for days at a time, they don’t carry any cooked food. Instead, they chew on and eat the stems of *Caralluma fimbriata*, which grows wild in the region. This is enough to keep their hunger and thirst under control.

The same herb—*Caralluma fimbriata*—is the basis of a weight-management ingredient offered by Nutraceuticals International, of Elmwood Park, NJ. Marketing director Nichole De Block says the product is available from her firm’s India-based GMP-certified partners. She reports that it has been eaten in rural regions for centuries and is believed to have an effect on the appetite-control center of the brain. For this reason, says De Block, “It is commonly known as ‘famine food’ in India.”

DSM Nutritional Products, a firm with world headquarters in Basel, Switzerland, and U.S. offices in Parsippany, NJ, and Ames, IA, reserves center stage in the weight-management category for Fabules, a patented lipid emulsion.

Caroline Brons, senior marketing manager, says the ingredient works with the

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ileal brake, the body’s “natural appetite controller,” to enhance satiety and reduce calorie intake (by up to 30%). It also helps reduce the regaining of weight after dieting. It is available in liquid and powdered form and can be used in a variety of applications, including yogurt, smoothies, and milk, as well as dry mixes, protein (meal replacement) drinks, and more.

Nithya Hariharan, a DSM market analyst, emphasizes, “The modern female consumer doesn’t seem to be searching for ‘weight-loss’ products so much as wanting something that targets ‘weight management.’ The products should be performance-based as opposed to solely focusing on vanity. Because more women are working and tending to families concurrently, they require a weight-manage-

ment product that provides energy as well as decreasing stress.”

FenuLife is North Bergen, NJ-based Frutarom's leading ingredient in the weight-management area. Eden Somberg, a technical specialist in the company's Health Business Unit, describes FenuLife as a deodorized galactomannan extract from

fenugreek that “helps to lower the glycemic index and prolong satiety.”

According to Somberg, the goal of any good weight-loss formula should be to work on cravings, appetite suppression, energy, and mood. “The need for lifestyle changes, particularly exercise, cannot be overstated,” she says.

The Next Generation

Icon Group LLC (Brattleboro, VT), an affiliate of NutraGenesis, recently launched TrimElite, which it describes as “a next-generation multifunctional, proprietary nutraceutical ingredient for healthy weight management and metabolic wellness.” Boasting structure-function claims in weight management, satiety, appetite control, thermogenesis, metabolic wellness, cardiovascular health, blood sugar balance, stress reduction, and mood enhancement, TrimElite is aimed at managing both leptin and cortisol, two hormones that play pivotal roles in regulating weight and metabolic health.

The company says leptin is produced by fat cells and actively crosses the blood-brain barrier in healthy-weight individuals to influence satiety, appetite control, glycemic balance, and metabolism. Leptin function is reduced when the body becomes resistant to its effects as a result of inflammation accompanying weight gain. TrimElite helps promote healthy leptin function through a reduction in systemic inflammation.

Cortisol is described as “an appetite-promoting hormone produced by the adrenal glands in response to many types of stress people encounter in their daily lives.” TrimElite is intended to help reduce stress-induced appetite by reducing serum cortisol levels.

P.L. Thomas (Morristown, NJ) bases part of its weight-management philosophy on nutraceutical ingredient Satiereal, which is aimed at lowering food cravings.

Vladimir Badmaev, MD, PhD, the company's director of scientific and medical affairs, describes Satiereal as a patented extract of saffron stamen (*Crocus sativus*) that works by decreasing stress and improving emotional wellness, thus producing a state of satiety. Satiereal is reputed to enhance activity of the neurotransmitter serotonin that controls satiety, appetite, mood, and compulsive behavior, and also decreases anxiety. The company says that double-blind, placebo-controlled clinical trials have shown Satiereal to increase satiety, decrease hunger, reduce sugar cravings, and reduce compulsive snacking between meals. Moreover, 80.7% of women taking Satiereal in the trials lost weight, with a maximum of 11 lb lost in two months, and

weight loss accounted for in fat mass rather than lean mass.

A Current Trend

Shaheen Majeed, marketing director for Sabinsa Corp., which has U.S. offices in East Windsor, NJ, and Payson, UT, states, "The current trend is to comprehensively address weight-management support through fat breakdown, lean body mass buildup, and satiety support. Since metabolic syndrome is often linked with obesity, phytonutrients such as fiber that potentially reduce risk factors for cardiovascular disease and support the maintenance of healthy blood sugar levels are also included in weight-management support measures."

According to Majeed, Sabinsa's LeanGard is a blend of three important ingredients: 1) Forslean, a patented, "clinically validated" natural extract from *Coleus forskohlii* roots that supports lean body mass and a healthy body composition, 2) GarCitrin, a patented natural satiety support extract from the fruit

rind of *Garcinia cambogia* (Malabar tamarind), containing hydroxycitric acid and garcinol, that is “better absorbed and utilized” than extracts containing hydroxycitric acid alone, and 3) Bioperine, a patented extract from black pepper fruits that enhances the bioavailability of the other two nutrients.

Lipid Nutrition, a Dutch company with U.S.

offices in Channahon, IL, offers PinnoThin, its Korean pine nut oil ingredient. Described by the company as an “innovative satiety ingredient,” it boasts Generally Recognized as Safe status for use in baked goods and baking mixes, beverages and beverage bases, breakfast cereals, dairy product analogs, fats and oils, grain products and pasta, fluid milk and milk

products, nuts and nut products, processed fruit and fruit juices, processed vegetables and vegetable juices, snack foods, soft candy, and soup and soup mix applications.

Stop for a Few Seconds

At Origenetics Inc. in Anaheim, CA, Jit Maheshvari, vice president of marketing, says, “Any natural ingredient that helps a consumer to stop for few seconds to choose the right food from a decorative menu or food table can be the right ingredient for weight management. Many appetite suppressants can help on this issue. Ideally, dietary fiber will be the choice of ingredient to provide a filling effect. And a few ingredients can help in fat burning. I think these main concepts are the basis of weight management.”

His company’s leading product in this area is AimSlim, a standardized extract of organic *Achyranthes aspera*. This traditional Indian herb contains protein, fatty acids like oleic acid and linoleic acid, and saponin glycosides. Hypothetically, dietary oleic acid can convert into a fat messenger called oleoylethanolamide (OEA). OEA decreases meal frequency. Published literature also suggests that OEA acts independently of the cannabinoid pathway and regulates PPAR-alpha activity to stimulate lipolysis (the breakdown of fat stored in fat cells).

Phase 1 Hunger Controller, in combination with Phase 2 Carb Controller and Phase 3 Sugar Controller, leads the weight-management parade at Kearny, NJ-based Pharmachem Laboratories.

Mitch Skop, the company’s senior director of new product development, describes Phase 1 as “a convenient family of flavored beverage powders” containing trademarked Olibra, which has been clinically shown to promote appetite control and satiety. A study published in the *International Journal of Obesity* showed that subjects who consumed foods containing Olibra had significantly reduced food intake at subsequent meals. ■

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