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A trendsetter in nutrition and health

With DHActive™, a high-quality omega-3 oil, and Caromax™, a dietary fiber with extraordinary health benefits, Nutrinova is establishing its presence in the new but quickly growing market segment of health promoting food ingredients.

There are differing views on the development of the food industry. However, experts agree on one trend, namely that of "nutraceuticals": Nutraceuticals, or food ingredients with health benefits, will grow at a rate well above average. There are two main types of application: supplements in the form of soft gel capsules or tablets with vitamins, minerals or oils, and the actual integration of functional food ingredients into the food itself: Reuters expert Ben Longman comments: "The new wave of products that feature proprietary ingredients and aim to tackle some of the ground currently occupied by preventive medicine will be one of the key growth areas of the future." [1]

Nutraceuticals satisfy the demand for food ingredients that promote good health and are also convenient: vitamin tablets, muesli bars rich in fiber, bread with omega-3 fatty acids, or yogurt with probiotic, healthful benefits – all of these can be obtained conveniently, taste good, and are healthy.

Omega-3 fatty acid – essential to good nutrition

Docosahexaenoic acid (DHA) is a polyunsaturated omega-3 fatty acid that can only be produced by the body in limited quantities. It is a major building block in the brain and the retina. DHA has demonstrated positive health effects: Scientific data on DHA indicate positive effects on cardiovascular disease and mental disorders. Experts recommend a daily dose of up to 1.2 grams, however the average DHA consumption in typical Western industrialized countries is less than 200 mg per day.

DHA is commonly extracted from the oil of fish, which is enriched by the algae fish eat. Celanese Ventures found a way to extract the desired oil directly from microalgae, grown in a special fermentation process. Today, Nutrinova, which acquired the product and technology from Celanese Ventures, produces high quality DHActive™. Compared to fish oil, DHActive™ has many advantages: a significantly higher amount of DHA and a smaller amount of undesired fatty acids, no impurities, no fishy taste, and it is derived from a purely plant-based source.

Attractive applications for DHActive™

DHActive™ in soft capsules will likely be the first product application on the market. For the market launch, Nutrinova is working with Swiss Caps AG, an experienced production partner for pharmaceutical companies and producers of dietary supplements. At present, customers are primarily companies with a presence on the

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U.S. market, which Nutrinova has been supplying since mid-2002. Regulatory approval for the European market is expected within the next two years. Dr. Thomas Kiy, head of the DHActive™ business, is already working with customers on additional applications for enriching beverages and snacks with DHActive™.

VegaGels™ and DHActive™

With VegaGels™, Swiss Caps produced the world's first all-vegetal soft capsules, based on potato starch. The capsules taste completely neutral, and are easy to swallow and digest. Since the water content of the shell is low, no water penetrates the filling. For the CEO of Swiss Caps, Dieter Engel, the new capsule is a successful growth business: "We are seeing an increasing trend towards gelatine-free capsules in the dietary supplement business. We have had VegaGels™ on the market for two years and sold several hundred million capsules in 2002." Engel expects additional market opportunities through the combination of DHA extracted from naturally occurring microalgae and the soft plant-based capsule. At the end of the day, the new DHActive™ capsules are well suited for those who consciously choose a vegetarian diet.

New, natural and healthy

Caromax™ is also part of the trend to combine nutrition and health. Caromax™, which is derived from the pod of the carob tree that is native to the Mediterranean region, has a very unique profile of characteristics: As a dietary fiber, it promotes digestion, while the active components in carob fiber have also been shown to reduce cholesterol levels and to contain antioxidant properties. Independent studies prove these health benefits. In 2002, Nutrinova started to market Caromax™. The Wiesbaden company, Dr. Wolz Zell-Hefepräparate GmbH, is one of the first partners in this endeavor. Founded in 1969, the company is a market leader in Germany in yeast-based products to promote good health. "Our customers expect us to deliver new, natural products with real benefits and at reasonable prices. Caromax™ fulfills these expectations," says managing

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1. Strict quality control of the VegaGels™ is a top priority at Swiss Caps.

2a/b. Swiss Caps produces both vegetarian and conventional soft capsules using rotary die technology. In a single work process, the capsule halves are produced, the filling metered in by volume, and the capsules sealed.

3. Dr. Thomas Kiy, head of DHActive™ for Nutrinova, and Dieter Engel, CEO Swiss Caps AG, want to launch DHActive™ on the market. Production of the oil is already underway. Encapsulation is being prepared.

4. A product based on Nutrinova's Caromax™ fiber will be sold in pharmacies under the brand name "Cholesterinreduktion Dr. Wolz". Caromax™ is a natural, plant-based dietary fiber derived from the pod of the carob tree, containing antioxidants, and offering cholesterol-reducing benefits.

director Dr. Georg Wolz, as he explains the reasons for entering into a partnership. "Caromax™ is a new dietary fiber which comprises the entire spectrum of valuable plant-based components, not just a single active ingredient."

In contrast to other dietary fibers, such as oat bran, Caromax™ demonstrates clear advantages. It tastes good, is easy to process, and reduces cholesterol better then any other dietary fiber. "We will position ourselves well with this new product," says Dr. Georg Wolz convincingly.

Joint market launch

The most important sales channel for "Cholesterinreduktion Dr. Wolz" are pharmacies. Customers often turn to pharmacists for advice. For the first time, they will have the only antioxidative fiber available that can also lower cholesterol. Together with the leading health food store chain Neuform, Dr. Georg Wolz is establishing another chain of distribution to market the product.

To position the new product on the market, Dr. Wolz Zell-Hefepräparate GmbH is organizing the marketing and Nutrinova the scientific studies of the health effects of carob fiber. With a view to the future, Nutrinova is continuing to develop Caromax™, for example, to improve its taste, consistency and suitability for beverages and to meet the demands of customers and markets. ◂

[1] *Ben Longman (2001): "Future Innovations in Food 2001", Reuters Business Insight, p. 44*