

## Meeting the Trend for Health and Convenience

by Ian Healey

As people around the world eat more processed 'convenience' foods, their consumption of healthy dietary fiber typically falls far short of recommended minimums. The average American consumes just 14 to 15 grams of fiber a day, well below the recommended minimum of 20 grams to 35 grams.

There is an increasing social commitment to maintaining a healthy lifestyle amid the everyday rush, which translates into an opportunity to market healthier and more convenient foods. Dow Wolff Cellulosics (DWC) is addressing these needs by offering novel solutions for maintaining freshness, convenience and health.

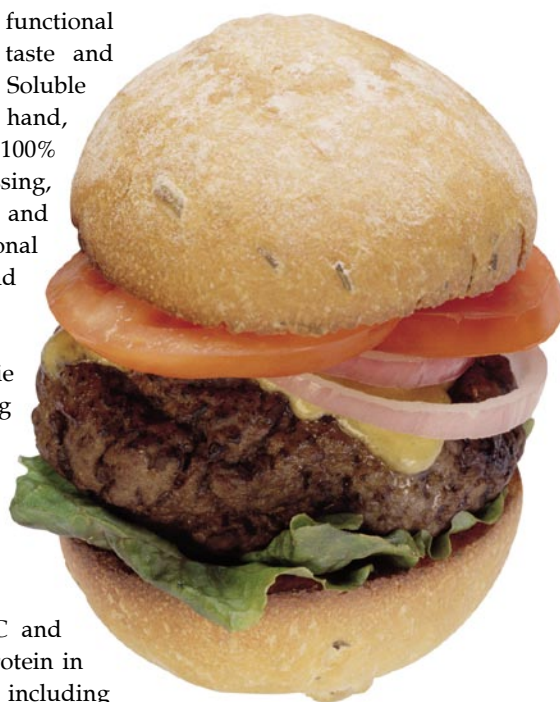
Formulators are challenged with quickly developing new products and enhancing existing ones to incorporate these consumer-desired benefits, while upholding high standards in quality, texture and taste. DWC offers a variety of renewable, plant-derived food ingredients including Clear+Stable Carboxymethyl Cellulose, FORTEFIBER™ Soluble Dietary Fiber and METHOCEL™ Food Gums.

Cellulose is one of many plant-derived sources of dietary fiber, but it is not naturally water-soluble and can be

difficult to incorporate into functional foods without sacrificing taste and texture. FORTEFIBER™ Soluble Dietary Fiber, on the other hand, is modified to provide 100% solubility through processing, making it a more practical and healthy fiber for nutritional shakes, energy bars and supplements.

We talked to Stephanie Lynch, Global Marketing Manager, Food and Nutrition, about the need to apply technological progress to meet market requirements:

"Our dietary fibers, HPMC and MC products, can mimic protein in various food applications, including formed and extruded foods, baked goods, and batters, as well as salad dressings, sauces and soups. The ability to mimic protein comes from two unique properties: One way is through the fiber's ability to bind water by gelling when heated, which locks in freshness, and the other is their hydrophilic and lipophilic nature, which emulsifies and can enhance texture. We have products today that can replace gluten, and are working on new products to replace other proteins like casein. Our cellulose fibers have been relatively stable in price



*Dow Wolff Cellulosics' emulsion technology for meat products helps reduce the amount of saturated fat in products like frankfurters, sausages, and veggie burgers.*

and can often provide a cost advantage over proteins and starches for certain systems like low fat applications due to their efficiency at lower dosages."

METHOCEL™ Food Gums form a strong gel structure when heated, which binds water and can emulsify the fats and oils. In bakery products, this gel network can trap the volume-enhancing gases in prepared foods. This improves texture, flavor, succulence, moisture retention, uniformity and appearance in a wide range of applications.

### Health benefits

Launched in late 2006, DWC's FORTEFIBER brand is recognized for its ability to deliver reliable benefits around glucose and cholesterol management, which is important to promoting a healthy lifestyle. The clinically proven health benefits FORTEFIBER can provide help enable food formulators to make label claims that appeal to a growing number of health-conscious consumers. FORTEFIBER™ Soluble Dietary Fiber is a plant-derived fiber that is virtually non-allergenic and



non-fermentable, making it suitable for bakery, cookie, candy and supplement applications, in chewable or tablet forms. It has also received an award from the Institute of Food Technologists (IFT) for its ability to increase fiber content in a variety of products without sacrificing taste and texture. The company has also developed and validated an analytical method to help formulators more accurately quantify the amount of dietary fiber on nutritional labels.

DWC products also play a big role in allergy-free foods, since they can support, for example, gluten-free products such as baked goods. Other new products in development are focused on the area of weight management by reducing fat uptake into the body, and DWC is currently working with customers to validate satiety benefits provided by its products.

### Emulsion and fat replacement technology

DWC developed an emulsion and fat replacement technology using METHOCEL™ Food Gums to help formulators address a growing trend to minimize trans fats and reduce saturated fats in convenience foods, while preserving the taste, texture and mouthfeel of existing formulations. When combined with healthier liquid oils such as olive and canola, METHOCEL Food Gums form an emulsion and semi-solid gel 'matrix', which behaves like a harder or saturated fat. By using this 'matrix' emulsion technology, formulators can virtually reduce up to 73% of total fat content in a variety of applications, including baked goods, batters, meats, dressings, sauces and more.

"Our matrix system, allows us to replace unhealthy fats - which are added to make products taste good - and to mimic the saturated fats that it replaces. Our current primary focus is on meat and meat snacks, where the feedback has been excellent," said Lynch. "The texture of the fiber is hidden in the finished product, and the moisture is trapped and released when you bite into it, providing moist succulence. In bakery products like muffins, we have



also been able to reduce saturated and trans fats, but maintain a fluffy, moist and soft crumb texture."

### Environmental benefits

The emulsifying properties of METHOCEL™ Food Gums provide freezer stability and prevent oil pooling during distribution, which improves the quality, appearance and shelf-life of finished products. These ingredients also preserve the freshness for integrity of food products through multiple freeze/thaw cycles that can take place between the manufacturing plant and the consumer's freezer.

The company is committed to building a sustainable business based on renewable resources and respect for the environment. Their aim is to leave a positive footprint in all the communities they operate globally.

"Our main focus remains on delivering technology for both health and convenience," Lynch commented. "We have completed several customer trials on snack bars, low-fat sausages and bakery products, with very positive responses. The next stage is to find long-term development partners to share in bringing more new, innovative products

to customers and the market. We believe in intimacy between ingredient suppliers and manufacturers, which is critical in today's health benefit market, as it requires collaborating with our resources for consumer education and regulatory aspects."

"To summarize, we believe that the main trends - Health, Convenience and Indulgence - will continue for some time. We live in a 'cash rich, time poor' society, where the need for products which are tasty, flavorful, and healthy is critical. The food industry has an important role as part of this healthy lifestyle solution, and we look forward to bringing new technologies to the market that meet these needs."

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