Dietary Fiber for Confections

Nutrition research is pushing the recommended daily value for dietary fiber higher. This presents market opportunities for confections enhanced with dietary fiber.

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Dietary fiber is the sole macronutrient for which true dietary supplementation is necessary. In the United States, consumers eat on average 12 to 13 grams of dietary fiber per day, which is only 50 percent of the current daily value (25 grams based on a 2,000-calorie diet). Further, as nutrition research advances, the daily value for dietary fiber is being pressured upwards by multiple scientific and nutritional professionals. It is recommended that the daily value for dietary fiber be increased to 30 to 35 grams per day, and diabetics are often told to increase dietary fiber up to 50 grams per day. It is extremely difficult to consider more than doubling the current average intake of dietary fiber without some type of true dietary supplementation. Further, dietary fiber’s indirect influence on total sugar and caloric content of foods influences other nutritional issues from obesity to dental caries. The implication is that more and more food choices with increased or significant levels of dietary fiber will be needed to meet these evolving and aggressive dietary objectives.

WHAT IS DIETARY FIBER?
Compounding this discussion is the ultimate question, What is dietary fiber? FDA clearly recognizes the importance of dietary fiber as a key nutrient by requiring it to be included in nutrition labeling. However, there is no consensus on a scientific definition of dietary fiber. It could be defined as indigestible carbohydrate with a degree of polymerization (DP or the number of hexose sugars connected to each other) of 3 or greater. This is not totally inclusive, and is overly simplistic and arbitrary. Having said this, in the United States for nutrition-labeling purposes, dietary fiber is defined by the method(s) used to measure it (21 CFR 101.9(c) (6); 21 CFR 101.9(g) (2)). Eventually, a definition will be agreed upon. In the meantime, if you have an approved analytical method that is shown to be both accurate and precise, you can use it to determine the dietary fiber content of any given food for nutrition-labeling purposes.

Given the complexity of the chemistries involved and the lack of a clear definition of dietary fiber, there is no analytical methodology that covers all needs. For example, consider AOAC Method #2001.03 (Figure 1). This method is robust enough to capture insoluble dietary fibers, high-molecular-weight soluble dietary fibers and low-molecular-weight dietary fibers, but it is only approved for use in foods that contain a specific type of dietary fiber. The lack of analytical capability compatible with the wide variety of dietary fiber ingredients, use...