

Ask the Expert: Whey Proteins and Nutrition Bars

Sharon Gerdes, a food technologist at the center of the comprehensive dairy technical support system of Dairy Management Inc.™ (Rosemont, Ill.), helps food and beverage manufacturers formulate successful products using ingredients such as whey protein concentrates and isolates, and non-fat dry milk. In this article, she addresses how whey proteins can extend the shelflife of nutrition bars.—Eds.

There is a wide variety of nutrition bars on the market, all touting various healthy ingredients. But if there is one essential component common to the category, it is protein. A bar's protein content might vary from just a few grams in the granola/cereal bar category to 30g in the true protein bar group. In between are various sports nutrition bars, energy bars, weight management bars and meal replacement bars. Some tout their balanced blend of carbohydrates, fats and proteins; others are marketed as being either low-fat or low-carb. Either way, protein remains an important component.

Manufacturers who want to achieve a high protein level in nutrition bars can face a challenge when it comes to texture. They usually want a high-quality protein with a clean flavor profile, pointing to whey proteins with a high biological value and neutral flavor. But increasing the levels of typical whey protein isolates and concentrates can contribute to the hardening of a bar during its shelflife.

Extending Shelflife

The challenge of keeping bars soft has been solved by several new whey ingredients featuring a combination of typical whey protein concentrates or isolates and hydrolyzed whey proteins. Hydrolyzed whey proteins have been enzymatically modified to reduce the large protein molecules into smaller whey peptides. These whey peptides do not appear to draw away moisture from other ingredients in the bar, helping to maintain bar softness. Hydrolysis also changes the flavor profile of whey proteins in a way that works well in bar formulations.

These specialty whey ingredients allow nutrition bar manufacturers to maximize protein in bars while maintaining a consistent texture for up to one year. And because the ingredients are whey proteins, they provide unique nutritional benefits that appeal to health-conscious consumers.


For example, whey proteins offer the advantage of having the highest concentration of branched-chain amino acids (BCAA) of any protein source. The BCAAs—leucine,



Several new specialty whey ingredients help nutrition bar manufacturers make protein bars that maintain a consistent texture for up to one year.

leucine and valine—are unique among amino acids in their ability to provide glucose and a readily available energy source during endurance exercise. The oxidation of amino acids, mainly BCAAs, can provide

10% to 15% of the total energy required during exercise.

Emerging research suggests that higher daily intakes of high-quality proteins and their amino acid components, especially the higher amounts of leucine found in whey protein, may help people on a reduced-calorie diet preserve lean muscle mass while burning fat more effectively than those who just cut calories while consuming lower amounts of protein. 

Dairy Management Inc. (DMI) is a domestic and international planning and management organization that builds demand for U.S.-produced dairy products on behalf of America's dairy farmers. To locate suppliers of specialty whey proteins for nutrition bar formulations, contact DMI's Technical Support Hotline at 800-248-8829 or visit www.doitwithdairy.com.

A special thanks to the California Dairy Research Foundation (Davis, Calif.), which was instrumental in putting this article together.

PHOTO COURTESY OF THE NATIONAL SUNFLOWER ASSOCIATION