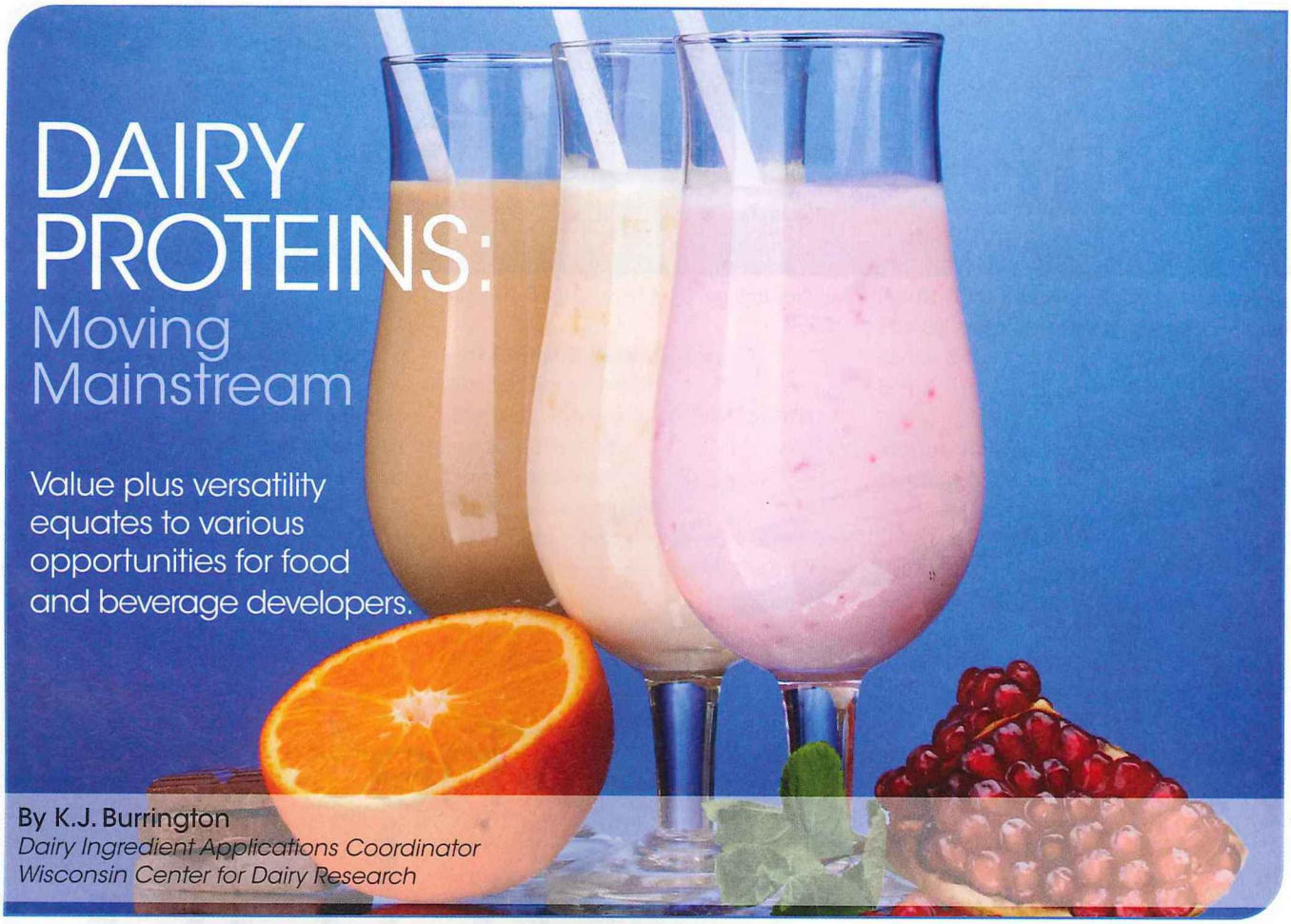

# DAIRY PROTEINS: Moving Mainstream

Value plus versatility equates to various opportunities for food and beverage developers.

By K.J. Burrington
*Dairy Ingredient Applications Coordinator*
*Wisconsin Center for Dairy Research*

**Heightened awareness of aging**, obesity and chronic health issues has consumers taking a closer look at what they eat and drink and how those choices impact their overall wellness. Today's consumers are starting to look for protein in their food and beverage products and as the food and beverage industry learns more about the many benefits of versatile dairy proteins like whey protein and milk protein concentrate, the door has opened wide—moving an ingredient previously only recognized by the weight-lifting crowd into mainstream consumer view. This spells opportunity for the functional food and beverage industry.

"As nutrition and product research unfolds on the numerous benefits of dairy proteins, consumer interest has increased, and companies see the opportunity," said Vikki Nicholson, senior vice president, Global Marketing, U.S. Dairy Export Council, Arlington, VA. "Not only are we seeing increased use in the U.S. market, but demand for protein—in particular dairy proteins—is accelerating across the globe as health and wellness agendas dominate the regulatory and government world and consumers are demanding more value from their food and beverage products."

Dairy protein ingredients provide ideal nutrition and application benefits for the functional food and beverage formulator to meet today's demands.

## Fast-Acting, Easily Digested

Whey protein is a high-quality dairy protein that contains all the amino acids the body requires for muscle protein synthesis. Naturally rich in leucine and other branched-chain amino acids, whey protein has a fresh, natural taste and complements the flavor of the food to which it is added.

Easily digested, whey protein is also a fast-acting protein that can be incorporated into a wide range of food and beverage products, such as oatmeal, smoothies, clear beverages, yogurt and snack bars. Functional and soluble, whey protein isolates and concentrates provide value to the functional food and beverage industry to reach consumers interested in weight management, muscle benefits and healthy aging.

Consumer attitudes are increasingly positive toward whey protein, especially when consumers are informed of the benefits. A recent study found that after learning the definition of whey protein, more than 50% of consumers surveyed have extremely or very favorable opinions of the dairy protein. This same study found that about half of consumers surveyed already associate whey protein with messages of helping build and maintain muscle, increasing lean muscle mass and preventing muscle loss during aging.

## Aging Boomers & Protein

With age, an estimated 30% of people older than 60 and 50% of those aged 80 and older may experience a loss of muscle mass, function and strength. Aging consumers are increasingly making healthy food and beverage choices as one way to help maintain

***This article in a nutshell:***

- Fast-acting, easily digested
- Aging boomers & protein
- Protein & weight
- Opportunities at breakfast
- Milk protein concentrate

an active lifestyle. Research has shown that consuming high-quality protein such as whey protein after resistance exercise can help minimize muscle loss, which may allow the aging consumer to be active for a longer period of time. In addition, recent research recommends that the total protein intake for older people be increased from .08 grams/kg/day to 1-1.5 grams/kg/day.

Because they are easily digested, whey protein and milk protein concentrates provide an ideal source of protein to use with products appealing to the maturing consumer—including beverages, bars, oatmeal and even bread pudding.

## Protein & Weight

Consumers are gaining more knowledge about satiety and the benefits surrounding it for weight management. According to Mintel consumer research findings, 44% of all functional beverage drinkers expressed interest in maintaining healthier body weight through beverages that carry a "satiety" claim.

A consumer study conducted by the NPD Group, Port Washington, NY, for Dairy Management Inc. (DMI), Rosemont, IL, indicated 67% of respondents said that feeling full is important to them when trying to lose weight. Interestingly, 72% agreed the best way to control hunger is through a nutritionally balanced diet; 60% believed that satisfaction from high-carbohydrate foods is short-lived; and 54% agreed that protein-based foods are the best at satisfying hunger. Whey protein, when used as part of a higher-protein diet, can provide that feeling of fullness, or satiety, which helps curb the appetite and decrease snacking.

But protein is about more than just satiety. Newer research also demonstrates the ability of whey protein to help improve body weight and composition when compared with consuming an equal amount of calories from carbohydrates. The study was conducted by the USDA-Agricultural Research Service Beltsville Human Nutrition Research Center and published on the Journal of Nutrition website. Researchers tracked body weight, body composition and waist circumference data from 73 overweight and obese adults, who were assigned to consume a 200-calorie beverage that contained 28 grams of whey or soy protein plus carbohydrate or carbohydrate alone, twice a day for 23 weeks. No other dietary direction was given. While there were no significant differences between groups at the start of the trial, at the end of the trial the whey protein group's body weight was approximately 4 pounds lower than the carbohydrate group, and body fat was 5 pounds less than the carbohydrate group. Additionally, the whey protein group's waist size was nearly an inch smaller than both the carbohydrate and soy protein groups.

## Opportunities at Breakfast

Over the next eight years, the breakfast foods category is projected to be one of the fastest growing food categories, according to the NPD Group.

Food industry trend analyst Dr. Elizabeth A. Sloan said this prediction supports recommendations to fortify traditional breakfast foods, which are typically low in protein. "Consumer interest in protein is on fire," she noted. "Though we've seen increased interest over the years, whey protein still represents a grossly overlooked opportunity in the specialty and health food channels and among very health-conscious and condition-specific consumers, beyond its sports nutrition connection. It is standing on the edge of mass commercialization."

Eating a healthy breakfast sets the tone for the day. Nutritionists have frequently stated that breakfast is the most important meal of the day, but with today's busy lifestyles, many people skimp on breakfast. Many who do eat breakfast choose foods low in protein. While the body of knowledge about the benefits of protein at breakfast has grown significantly, and the food industry has begun offering breakfast items with whey protein and other dairy ingredients, innovation is still needed to meet the demand for better breakfast foods.

Whey protein can be incorporated easily in a variety of breakfast applications. Several have been created by the Wisconsin Center for Dairy Research in partnership with the U.S. Dairy Export Council.

A few examples include a convenient, portable breakfast bite—which incorporates whey protein into the dough—wrapped around a nugget of cheese, baked and served warm, or a raspberry and whey protein smoothie. More information about whey protein in breakfast foods and application ideas can be found at www.Innovate-WithDairy.com.

## Milk Protein Concentrate

Milk protein concentrate (MPC) is also used for its nutritional and functional properties. MPC is produced from milk by a series of processes that include ultrafiltration, evaporation and drying. It is high in protein content (casein and whey protein), commercially available in protein levels of 42-89% and most commonly used in process cheese, nutrition drinks and bars.

MPC ingredients are desirable for protein and calcium fortification of nutritional beverages, frozen desserts, cultured products and more. High-protein MPCs can be low in carbohydrate content, containing minimal amounts of lactose. This high-protein, low-lactose ratio makes MPC an excellent ingredient for protein-fortified beverages and foods and low-carbohydrate foods. MPCs also retain a fair portion of calcium because it is bound to the casein. NW

*Endnote: The U.S. Dairy Export Council, supported by the dairy checkoff program, provides extensive information on applications utilizing dairy proteins and other dairy ingredients. For technical assistance working with dairy ingredients, e-mail techsupport@innnovatewithdairy.com. The U.S. Dairy Export Council plans to showcase a variety of new uses for dairy proteins and other dairy ingredients at the upcoming IFT Annual Meeting and Food Expo in Las Vegas, NV, June 25-28.*

*About the Author: Kimberlee (K.J.) Burrington holds a bachelor's and master's degree in food science from the University of Wisconsin-Madison and has 25 years experience in product development. She is a dairy ingredient applications coordinator for the Wisconsin Center for Dairy Research (UW-Madison), which is part of the National Dairy Foods Research Center Program, supported by the Dairy Research Institute.*

***References furnished upon request.***