



Innovative whey ingredients meet global demands

State-of-the-art filtration, evaporation and drying equipment are producing new protein-based dairy ingredients used in beverages, baked goods and dairy foods.

By [Sharon Gerdes](#)

March 14, 2013

Dairy continues to be the ingredient of choice in many food products because of its high-quality protein, excellent flavor profile and unique functionality in a wide variety of applications. Domestic dairy suppliers are proving to be both consistent global suppliers for basic dairy ingredients and diligent innovators of new ingredients.

Innovation typically involves one or more of these strategies: new manufacturing processes; improved functionality in end use; or more stringent specifications to meet evolving end user or regulatory standards.

New manufacturing processes

Initially, domestic suppliers focused on whey ingredients derived from cheese making. But in recent years, they started producing a variety of concentrated milk protein ingredients derived directly from milk. State-of-the-art filtration, evaporation and drying equipment in the Institute for Dairy Ingredient Processing at South Dakota State University are being utilized by dairy ingredient manufacturers to conduct commercial feasibility studies on new protein-based dairy ingredients.

Dairy ingredients are used extensively in ready-to-drink beverages, where improved heat stability is a desirable attribute. Improved heat stability often can be achieved through modified manufacturing practices.

“At Idaho Milk Products, we have broadened our product offering to include a higher-protein ingredient, IdaPro MPI-88. Our low-heat filtration process ensures the whey proteins remain in their native state and the casein proteins are in micellar form, making this an ideal ingredient for high-protein sports nutrition, adult nutrition and weight management applications,” said Jessica Henry of Idaho Milk Products, Jerome, Idaho.

“Instant Micellar Casein is an all-dairy 90% protein powder that will increase the protein content of your products, while maintaining a great clean taste and thick texture that is desired in many popular snack foods such as Greek yogurt,” said Jing Hagert of Milk Specialties Global, Eden Prairie, Minn.

Improved functionality

Dairy ingredients can facilitate advantages in bar and bakery applications.

“Glanbia Nutritionals has developed a unique protein binder which optimizes sugar reduction in baked and chewy-type granola bars, cereal clusters and other snack products. OptiSol 2000, a milk protein concentrate, is an effective and clean-label ingredient option which can facilitate up to 50% sugar reduction in foods,” said Linda Wilson of Glanbia Nutritionals, Fitchburg, Wis.

“Lactowell is a revolutionary sweet whey powder replacer that provides a clean fresh dairy flavor similar to dried whey. Sensadairy is a featured whey base ingredient with the same organoleptic properties as a skimmed milk powder and presenting even creamier notes,” said Victoire Visseaux of Lactalis American Group, Buffalo, N.Y.

Ongoing farmer-funded research at the Dairy Research Institute, Rosemont, Ill., is delving into additional opportunities in the dairy pipeline. For example, researchers at several universities are exploring technologies to aggregate whey protein with small polysaccharides. These unique dairy ingredients potentially can have increased heat stability and improve water binding and gelation properties.

Tighter industry specifications

Dairy ingredients are increasingly required to meet tight industry and regulatory specifications for certain applications, especially infant formula. One example is a new quality standard for Infant Formula that was adopted by China in April 2011. These specifications require nitrate and nitrite levels equal to or below 100 milligrams/kilogram and 2 milligrams/kilogram in powdered products. Indirect heat systems enable dairy manufacturers to meet these standards.

At the recent U.S. Dairy Industry Spore Seminar organized by the U.S. Dairy Export Council and DRI, the latest information on spore-formers and solutions was presented to help manufacturers control them during milk powder production.

Meeting industry demand

“We see an increased demand for whole milk powder, primarily for export to the Asian market,” said Marc Beck, executive vice president of strategy and insights at USDEC in Arlington, Va.

Suppliers who have announced new supplies and innovations with WMP include Dairy Farmers of America, Darigold, and Michigan Milk Producers Association.

Because of whey's superior protein quality, additional sources of higher level whey proteins are always in demand.

"Newly introduced Hilmar 9000 Whey Protein Isolate and Hilmar 9010 Instantized WPI, with a neutral flavor and favorable mineral profile, are practical fortification choices for nutrition bars, ready-to-drink beverages, dry mixes and other applications requiring a source of high-quality protein nutrition," said Gwen Bargetzi of Hilmar Ingredients, Hilmar, Calif.

Food manufacturers can find information about suppliers at www.innovatewithdairy.com and www.usdec.org. For additional questions, contact techsupport@InnovateWithDairy.com.

Did you enjoy this article? [Click here](#) to subscribe to *Dairy Foods* Magazine.



"Dairy Detective" is written by Sharon Gerdes, a food industry consultant who works with the U.S. Manufacturing 26 Ingredient Marketing program at the U.S. Dairy Export Council to promote the use of dairy ingredients in food and beverage formulations.

Click [here](#) for online version.