Dairy Proteins: Key Functional Properties

Dairy proteins can deliver the following key functional properties in foods:

• **Water binding** is an important function in beverages, bakery, confectionary, soups, meat products, batters, ice creams and custards. Milk protein concentrate (MPC), whey protein concentrate (WPC) and whey protein isolate (WPI) bind water to replace less desirable ingredients in these applications.

• **Gelation and viscosity** are critical to structure in cheese, yogurt and reduced-fat foods. Dairy proteins can form rigid, heat-induced irreversible gels that hold water and fat and provide structural support in these food systems.

• **Heat stability** is critical in extended shelflife beverages. Whey proteins provide superior functionality in beverages with pH below 6, while caseins provide superior heat stability in neutral pH beverages and UHT or retort-processed drinks.

• **Emulsification** is a crucial functionality in ice cream and coffee creamers. Milk proteins and the proteose-peptone fractions of milk can be a good replacement for commercial emulsifiers, such as mono- and diglycerides.

SOURCE: SONIA PATEL, MSC, MIDWEST DAIRY FOODS RESEARCH CENTER, DEPT. OF FOOD SCIENCE AND NUTRITION, UNIVERSITY OF MINNESOTA/2018 CLEAN LABEL CONFERENCE