DMI Product Research Update

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DMI – Created and founded by dairy farmers

Our Purpose:
On behalf of dairy farmers, drive increased sales of dairy products and ingredients

Our Role:
Work proactively and in partnership with leaders and innovators to increase and apply knowledge that leverages opportunities to expand dairy markets
Dairy Farmer Mission:
Drive Demand & Increase Dairy Sales

Goal: Accelerate Innovation & Sales through Industry-Wide Participation

Strategy: Coalition Partnerships

- Dairy Use at Quick-Serve Restaurants
- Lactose Intolerant Consumers
- Marketplace Leaders to Drive Change

Strategy: Targeted Partnerships

Goals:
- Optimize the Nutritional Benefits of Dairy
- Protect & Promote Sales

Strategy: Collective Partnerships

- Health & Wellness
- Research & Insights
- Sustainability
- Food Safety
- Consumer Confidence
- Globalization
- Exports & Ingredients
- Product & Nutrition Research

Goal:
- Lactose Intolerance
- Lactaid

Lactose Intolerance

Dairy Intolerance

Lactaid

Hood

Dairy Communications Management Team

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Product research key research priorities

- Applications & Technical Support
- Fluid Milk Revitalization
- Milk Powders
- Dairy Protein Ingredients and Co-products
- Food Safety and Cheese

Partnerships

- Drive Innovation
- Increase Fluid Milk Consumption
- Increase Dairy Exports
- Protect Consumer Confidence
Dairy Center Application Labs

**Goal:** Assist industry and marketplace partnerships to develop consumer relevant, good tasting safe products that can increase milk utilization by leveraging Dairy Center capabilities.
Fluid milk/beverage revitalization

**Goal:** Accelerate milk/dairy beverage innovation and fluid milk quality improvement by providing technical leadership, product development support and executing technical development plans

**Improve Quality**
- Controlling factors which negatively impact quality (e.g. light, packaging)

**Drive Innovation**
- Optimizing factors which drive innovative consumer experiences (e.g. sports nutrition, high protein, lactose free)
Milk powders

**Goal:** Develop the knowledge base to consistently produce powders that help the US milk powder industry meet tight customer specifications

- **Spore targets**
  - Ability to consistently meet low spore targets (e.g. biofilm prevention)

- **Powder variability**
  - Ability to consistently meet tight specifications (e.g. new tools)

- **Functional performance**
  - Ability to meet specific functional requirements (e.g. heat stability)

- **Shelf life and flavor**
  - Ability to meet long shelf-life and flavor requirements (e.g. processing impact)
Dairy protein ingredients and co-products

**Goal:** Expand utilization of dairy proteins by improving quality and performance and identifying uses for co-products.

**Performance**
- Develop technical insights to consistently produce high quality dairy protein ingredients
- Expand utilization of dairy protein ingredients
  - New technologies (e.g. charged membrane)
  - New milk ingredient fractions (e.g. micellar casein, milk derived whey)
  - New manufacturing process (e.g. rennet and acid casein)

**Co-products**
- Identify economically viable and value-added uses for milk and whey permeate, acid whey, whey cream, delactosed permeate and milk minerals
  - Develop new ingredients applications (e.g. sodium reduction)
  - New technologies to process more efficiently (e.g. mineral mining)
Protein toolkit is now available on USDairy.com
Technical resources also available at USDEC and USDairy.com website

**Technical Report:**
Milk Protein Concentrates: Manufacturing and Applications
Contributing writers: Nazareth Paulo, assistant professor, South Dakota State University
Sonia Patel, Application Technologist, Institute for Dairy Ingredient Processing
Reviewed by: Shantanu Agarwal, Ph.D., director, Product Research and Ingredient Technology, Dairy Research Institute®

Milk protein concentrates (MPCs) and milk protein isolates (MPIs) are high-quality proteins naturally found in milk. These high-protein milk powders offer the global food and beverage industry versatile food ingredients with excellent functionality and nutrition. The U.S. Dairy Export Council® and the Dairy Research Institute®, established under the leadership of America’s dairy farmers through the dairy checkoff program, developed this report to highlight the state of the science for manufacturing and processing these important dairy ingredients.

**Technical Report:**
Coproducets of Milk and Whey Processing
Contributing writers: Kimberlee (K.J.) Burrington, dairy ingredient and cultured products coordinator, Wisconsin Center for Dairy Research
Tonya Schoenfuss, Ph.D., assistant professor, University of Minnesota
Sonia Patel, application technologist, Institute for Dairy Ingredient Processing
Reviewed by: Shantanu Agarwal, Ph.D., director, Product Research and Ingredient Technology, Dairy Research Institute®

**Technical Report:**
Sensory Properties of Whey Ingredients
Written by: Kimberlee (K.J.) Burrington
Reviewed by: Shantanu Agarwal

**Technical Report:**
Whey Protein Heat Stability
Written by: Kimberlee (K.J.) Burrington
Reviewed by: Shantanu Agarwal
Cheese

**Goal:** Aid industry to improve quality/safety as well as enabling manufacturing of nutritionally-enhanced and specialty cheeses

**Nutritionally enhanced cheese**
- Develop technical insights to consistently produce high quality cheeses that meet nutritional guidelines

**Food safety**
- Continue to improve the safety, manufacturability, and quality of specialty cheeses

**Exports**
- Improve the desirability of US cheeses in the export and domestic markets (shelf life)
Food Safety

**Goal:** Mitigate risk of food safety incidents through training, sponsoring targeted research and activation of technical insights in partnership with the IC Food Safety Committee

Research platform focused on Listeria

- **Listeria monocytogenes fundamentals**
- **Tools for control**
- **Solutions for surface ripened and fresh cheeses**
2015 Food Safety Training

Non-Profit Training programs developed by the Dairy Industry for the Dairy Industry and trained by Food Safety professionals from Industry

Dairy Plant Food Safety Workshop
- Dairy Industry Quality, Sanitation, Engineering...
- Plant Personnel (management, sanitation, maintenance...)
- Upcoming Workshops
  - March 24 & 25  Visalia, CA (Dry)
  - April 28 & 29  Seattle, WA
  - June 2 & 3  Baraboo, WI
  - Aug 11 & 12  Green Bay, WI
  - Sept/Oct  East Lansing, MI (Dry)

Supplier Food Safety Management Workshop
- Dairy Food Safety, Quality, and Supply Chain leaders
- Supplier Quality and Purchasing Leaders
- Suppliers of Ingredients, Packaging, and Services
- Upcoming Workshops
  - May 19 & 20  Rosemont, IL
  - Sept 22 & 23  Rosemont, IL

Artisan/Farmstead Cheesemaker Food Safety Workshop
- 2015 Dates TBD

REGISTER at - www.usdairy.com/foodsafety
New Product Competition

2014-2015 competition is seeking dairy beverage innovation opportunities targeted for millennials with an excellent source of protein and utilizing the REAL® Seal.

Up to $16,000 in Awards

- Open to all undergraduate and graduate students enrolled during the 2012 – 2013 year
- Three top concepts will be showcased at the U.S. Dairy Export Council® booth at the Institute of Food Technologists annual meeting in Chicago, July 13 to 16, 2013.
- Winners will present at the Annual American Dairy Science Association® Annual Meeting in July 2013 where they will be awarded cash prizes and featured in numerous promotional materials
Thank you