CDR Research Forum
November 20, 2014

TURBO Technology Transfer Program
Wisconsin Center for Dairy Research

Center for Dairy Research “Solution Based Research Backed by Experience, Passion and Tradition”
TURBO Program

A comprehensive business accelerator focused on increasing the speed of new product commercialization in dairy related industries.

Our assistance can occur in two ways:

- If a company is interested in licensing CDR’s patented technologies or assisting in the development of non-patented technologies. CDR can then assist in further product development with the objective of reducing the commercialization time frame.

- Company has its own technology and seeks CDR’s technical assistance to further develop it for potential commercialization.
Turbo Program Goals

- **New Product Development**: Increase the number of new dairy-related products introduced into the marketplace.

- **Economic Development**: Job retention/creation and increased milk demand resulting from the successful new product introductions.
CDR Commercialization Assistance Strategies

CDR Technology Transfer -
Pro-actively market CDR existing patents or technologies to private sector companies.

Product Development -
CDR would then provide technical assistance to companies who license these patents or use their technologies with the objective of creating new products for the marketplace.

Private Sector Technologies -
Provide economic development and technical assistance to entrepreneurs or existing companies to support their innovation processes of developing dairy-related technologies into new products for the marketplace.

Dairyvative -
Condensed Milk
Technology Transfer

- Product Portfolio consisting of:
  - CDR patents available through WARF
  - CDR available technologies
  - CDR technologies currently being developed
  - Case studies of successful technology transfers

- Example:
  - Pizza - using low fat and fat free cheeses.

Innovation Development Portal

- Identify barriers to innovation:
  - Examples: R&D, marketing, financing resources...

- Provide links to various economic development resources both inside UW-Madison and outside.

- Explain WARF’s licensing process and serve as a facilitator to assist interested companies through this.
CDR Technology Portfolio

**Technology Transfer**

New Research Technologies for Dairy Products

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**Improved Low-Fat and Fat-Free Cheese**

**Description**

CDR scientists have developed a method for producing low-fat and fat-free cheese with enhanced texture and flavoring properties. This method involves the use of specific enzymes that are added to the cheese manufacturing process to help in the formation of the cheese base cell. The improved milk and whey substances, antibiotics, and other factors, the result in a phage-free or sterile-based milk during cheese making. This results in making the cheese base and whey with less added carbohydrates, including fat, fat-free milk, and whey solids, to the cheese base during the manufacturing process. They provide a combination of high-water solubility. They change the way the whey proteins interact, leading to improvements in the texture and functional properties of the cheese.

**Background and Markets Addressed**

As Americans try to reduce the amount of fat in their diets, non- and low-fat cheeses have become more popular. However, despite many attempts to improve the quality of these cheeses, a number of undesirable attributes remain. Problems such as a watery texture, an off taste, and the texture of cheese migrate, pucker, translucent color, tough, chewy texture, a poor meltability, or poor blooming during baking are still common.

**Advantages**

- Reduced and non-fat processed cheese with enhanced melting and blooming characteristics.
- Cheese with a white, smooth, and soft, spreadable, acceptable flavor and shelf stability.
- Contains less than 30% fat and may have a moisture content of 50 to 60 percent.

**Novelty**

Improved texture, color, and shelf life properties not yet achieved in non- and low-fat cheeses.

**Applications**

Production of low- and non-fat processed cheese.

**Intangible Property Status**

Patented, ready to be licensed through WIFAR

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**Inventors**

John Leszyk, Chris Beckley, David Grotelueschen, Mark Johnson, John Jenger, Ellen Suhm

For more information please contact:


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**Partners**
Technology Transfer Update

Tech. Transfer Policies
Actively work with CDR towards product commercialization.

“Letter of Intent”
Exclusivity
Require data on job creation and capital investment.

Prefer a Wisconsin location

Status
Nine technologies offered in April 2014
Four under “Letter of Intent”
Two under serious negotiation
Four others under discussion
Available CDR Technologies

**Modified Dairy Protein with Improved Functionality**
- Patented pending process that improves the emulsifying ability, heat stability and acid stability of dairy proteins.
- Can be considered as a less expensive substitute for Gum Arabic due to the fact that it will be domestically produced.

**Low Fat, Reduced Sodium Mozzarella-type Cheese**
- Patented process that allows the cheese to be categorized as a reduced-sodium cheese.
- No more than six percent fat
- Usually blended with other cheeses for increased flavor.
Available Technologies Cont’d

“Gold Standard” Beta-Casein

– CDR is looking for companies who are interested in adapting a patented process in adapting beta casein for commercial purposes.

– Potential to replace imported sodium caseinate in the marketplace.

A Dairy Solution to Sodium Reduction

– CDR is looking for companies who are interested in the formulation of products containing dairy permeate which can be used to reduce sodium while still having a “salty” taste.

– Permeate can also be used as a lower cost replacement for sweet whey resulting in economic benefits in food applications.
Available Technologies Cont’d

**Less Costly Production Process to Produce MPC**
- CDR has developed a less, costly, domestically produced, MPC that can serve as a caseinate alternative.
- This product can be used in clear beverages and other applications that require a clarity product and has excellent heat stability, emulsification and whipping properties.

**High Pressure Processing**
- Can increase shelf life, accelerate the aging process, and improve texture.
- CDR can assist a company in the development of formulations based on their goals.
Introducing Two New Technologies

Custom Flavored Cheese for Domestic or Export Mkt’s

– CDR has significant experience in the development of these products and has already developed a number of flavored cheeses including kimchi, horseradish, and others.

– CDR will work with your company to develop customized products and processes for a wide variety of flavors and processes.

“Fun Flavored” String Cheese for Children

– These fun-flavored products combine the nutritional benefits of mozzarella cheese with the sweet flavors that children enjoy.

– CDR can help you create a formulation that is designed for your specific markets.
Questions/Comments

Thank You

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