Center for Dairy Foods Technology

Mission

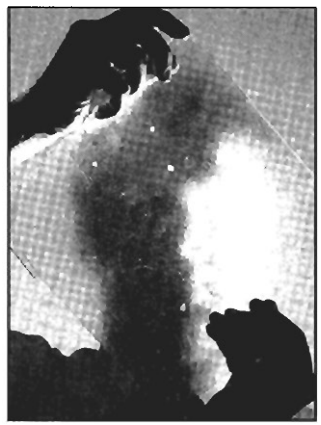
The Center for Dairy Foods Technology investigates the newest technologies in dairy products research. This research focuses on technologies that will produce new and novel dairy products that have advanced and advantageous properties.

The Center

The Center for Dairy Foods Technology (CDFT), under the direction of Dr. Paul A. Savello, investigates two milk processing technologies: ultra-high temperature (UHT) processing of milk and milk concentrates and concentration and separation of specific milk components by the use of synthetic membranes.

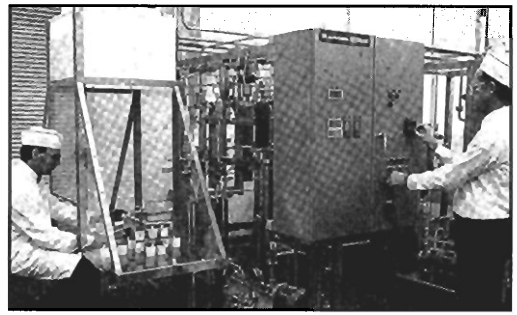
UHT processing of milk concentrates produces a high quality non-refrigerated milk product that promises to reduce the high cost of transportation and cold storage. These shelf stable milk concentrates will provide international markets with a fluid milk product that can be reconstituted by simply adding water. This product can also be used in a concentrated state for yogurt, ice cream, and some types of cheese production.

ULTRAFILTRATION membranes are being investigated to concentrate and fractionate fluid milk. This process is designed to remove water, some lactose, and other minerals from the milk, whereas other processes such as reverse osmosis only remove pure water. Ultrafiltration is performed at low temperatures so the flavor profile of the milk is not affected. Subsequent UHT processing of *this concentrate yields a commercially sterile milk that has up to one year non-refrigerated storage life.*



Eatable coating/film using whey proteins.

FRACTIONATION of milk into its individual components is a cutting-edge technology that will add more value to fluid milk. Milk components are being separated and purified using specialized membranes. Some of these components have been identified as having bioactivities that can prove to be important in the pharmaceutical and cosmetic industries. *The Center has already isolated a biomolecule from milk that has shown important bioactivity in cell culture studies.* Further research in this biomolecule's identification and purification will continue with the recently proposed funding from a major pharmaceutical company in the U.S.



Aseptic filling chamber for ultra-high temperature processing of milk.

Center Highlights

- Formally filed for three patents with the U.S. Patent and Trademark office. The CDFT has on file three invention disclosures that are now being reviewed for possible patent application. Research is continuing in one area that should lead to an additional invention disclosure.
- The patent application "Concentrated Sterile Milk" has been pursued by NutriScience, Inc., a Logan, Utah venture group.
- The patent application "Creamier Skim Milk" is being pursued by Utah State University's Research and Technology Park. This innovation prepares and processes skim milk to yield a fluid milk product that has the color and mouthfeel characteristics comparable to 2% milk and still has all the health qualities of skim milk.

For more information, please contact:

Paul A. Savello
Center for Dairy Foods Technology
College of Agriculture
Utah State University
Logan, UT 84322-8700
(801) 750-3618