

Why use the Pilot Plant?

Expertise

The Joseph J. Warthesen staff have extensive experience with the processing equipment in the facility, and the facility is in daily operation. Faculty members in the department may also be accessed independently for consulting opportunities.

Flexibility

Arrangements to use the pilot plant can usually be made within two weeks of the initial contact.



Support Research and Education

All funds go back into the center for supporting students and research.

Educational opportunities

Short courses offered in a variety of different areas.



Contact Us

For complete details regarding the Food Science and Nutrition Processing Center capability, capacity and services, please contact:

University of Minnesota
Food Science and Nutrition Department
Joseph J. Warthesen Food Processing Center
1334 Eckles Ave.
St. Paul, MN 55108
z.umn.edu/fscnpilotplant

Ray Miller
Pilot Plant Manager
(612) 624-7776
(612) 625-5272 (fax)
rmiller@umn.edu

Mitchell Maher
Junior Scientist, Pilot Plant
Extruder Specialist
(612) 624-7776
maher069@umn.edu

Department of
Food Science and Nutrition

Joseph J. Warthesen Food Processing Center



College of Food, Agricultural
and Natural Resource Sciences

UNIVERSITY OF MINNESOTA

Services Available



Joseph J. Warthesen Food Processing Center

The University of Minnesota has a rich history of dairy product research that goes back to the early 1900's. The Joseph J. Warthesen Food Processing Center (pilot plant), provides the University of Minnesota with excellent food product research and teaching facilities. The primary goal of the center is to provide a teaching and research infrastructure for the department, and to provide students with the ability to work and conduct research in an operating production facility. The facility is available to industry to provide process and product development support. Additionally, it can provide a vital resource for food companies that are just starting-up, or are evaluating new process and product lines. The use of the facility by industry partners provides opportunities for our students, as well as much needed revenue for maintenance and acquisition of equipment. The facility is inspected by the State of Minnesota and is certified as a food production facility.

Cheese and butter making

- Tetra-Sherping automated horizontal cheese vat
- De-wheying and salting belt
- Various sizes of open vats
- Vertical and horizontal cheese presses
- Associated equipment for manufacturing vein ripened cheese varieties
- Process cheese cookers
- Batch butter churn

Drying

- Coulter and Niro spray driers
- Agglomerator
- Freeze dryer
- Drum dryer
- Tray dryer
- Lab scale, single effect evaporators

Extrusion

- Buhler twin-screw extruder with loss-in weight powder feeding and flow metered liquid injection
- Spray Dynamics coating drum
- Fluidized bed dryer

Ice cream processing

- Tetra Hoyer Frigus SF continuous freezer
- Fruit feeder
- Variegator
- Homogenizer/plate cooler

Fluid Processing

- High temperature short time (HTST) pasteurization
- Microthermics ultra high temperature (UHT) system
- Vat pasteurizer

Mixing/size reduction

- Ribbon blenders
- Colloid mill
- Microfluidizer
- Various homogenizers
- Hammer mill
- Jacketed mix tanks

Separation/Concentration

- Membrane filtration using plate and frame or spiral wound systems (options of reverse osmosis through microfiltration)
- Cream separator, desludging, and decanter centrifuges

Short Courses Offered

- Pasteurization
- Extrusion
- Dairy chemistry
- Various cheese making courses

