

FPDL Policy Statement

Terms of Use Policy

Cornell University
Dairy and Pilot Plant
Department of Food Science, Stocking Hall

Personnel:

General Manager – Rob Ralyea
Projects & Resources Coordinator/Support Technician – Mackenzie Brown

Goals: To create a professional environment in which teaching, research, and extension activities can be conducted in support of the mission of the Department of Food Science and CALS program at Cornell. The activities of the FPDL and Dairy Plant must generate sufficient economic returns to cover FPDL and dairy plant employee salaries and enable appropriate maintenance of the facilities. As such, FPDL priorities are as follows:

Teaching - To provide hands-on learning experiences for students enrolled in Food Science and related curricula.

Research - To provide a state-of-the-art facility and technical assistance for conducting food related research at the testing/research/pilot plant level of production.

- To assist in the transfer of new technology from the research program to the industry.
- To provide facilities and staff support on a fee-for-use basis to assist companies and individuals with production and testing of product formulations provided by the client.

Extension - To provide facilities for use in applied extension research and continuing education programs.

I. AUTHORIZED PERSONNEL

Processing Area, Environmental Rooms, and Storage Rooms.

A. Every person that works in the pilot plant should have safety training specific to the pilot plant environment and an orientation training covering appropriate aspects of the pilot plant for their needs, in addition to the other safety training required by the University. Only individuals with this training will be authorized to work in the pilot plant. The Projects & Resources Coordinator/Support Technician (or designee) will provide this training. The trainee will receive an authorization form indicating that they have been authorized to work in the FPDL and the manager will keep a copy of this form on file and send a copy to the supervising faculty member for that student or staff member. All unauthorized students and staff should not be in the pilot plant processing areas.

B. Visitors. Visitors should always be accompanied by a person authorized to be in the pilot plant. For liability reasons, persons that are not students, staff, people holding contracts for product development/research activities, or officially enrolled in an extension short course of the University are not allowed to work in the pilot plant. Visitors touring or observing a process should be kept at a safe distance away from hazardous equipment that is in operation.

C. Tour Groups not affiliated with a class or program of the Department of Food Science. All members of a tour group must be 12 or older. Children under the age of 12 are not allowed in the pilot plant processing areas.

II. AUTHORIZED ACTIVITIES AND MATERIALS

A. Only activities approved and scheduled by the Projects & Resources Coordinator/Support Technician will be allowed in the pilot plant.

B. All activities in the pilot plant will use food grade materials. No experiments using nonfood grade ingredients, pathogenic organisms, or nonfood materials are to be used or processed in the food processing equipment, placed in food grade environmental rooms, or in food grade storage areas. Processing of cosmetics, drugs, manure, and other nonfood materials in the FPDL is not appropriate.

C. Pump oils and hydraulic fluids that are inside the motor drives of equipment that are required for their operation are allowed in the processing area. Extra oil or fluids should not be stored in the pilot plant areas. They should be stored in the machine shop or in a laboratory.

D. Specific training is required for operation of the overhead crane, pallet lifts, and fork lifts in the FPDL or dairy plant. If you have not been trained and do not have a training certificate do not operate these devices.

E. Glassware and glass containers, laboratory glassware, wooden items, (e.g., flasks, graduate cylinders, pipettes, beakers, thermometers, wooden shipping containers, etc.) are prohibited from the pilot plant (special exceptions may be granted for UHT processing trials).

F. Thermometers. Glass thermometers and thermometers containing mercury are prohibited. Metal probe digital or dial thermometers should be used. These should be provided by the user, the FPDL does not provide thermometers.

G. The overhead door should only be opened to bring in or remove large pieces of equipment from the pilot plant as authorized by the manager. Opening the overhead door allows insects and birds to enter the processing area. Shipping and receiving of items and trash removal should use the loading dock that is provided for this purpose.

H. Equipment and supplies that are packaged in wood or cardboard shipping containers should be received on the loading dock and the packing materials should be removed on the loading dock, not in the pilot plant. Nails, screws, metal straps, wood, and other packing materials should not be brought into the processing area.

I. All activities carried out by students and department staff in the pilot plant should be scheduled. Only students and staff that have scheduled activities should be working in the pilot plant.

III. SCHEDULING

The pilot plant calendar is posted on Corporate Time. All users must coordinate and schedule with the Projects & Resources Coordinator/Support Technician (Sean Schell – sss38@cornell.edu), who is the primary scheduler for all work that will occur in the FPDL. Bonnie Coffin (blc1@cornell.edu) is the secondary scheduler in the event Sean is unavailable. When scheduling the FPDL, you must identify equipment needed, as well as any other space, or utility (ie; ice water, RO system, etc) so that we may assure there are no conflicts with these resource systems.

NOTE: The extruder cannot be operated when dairy plant production is scheduled.

Priority in Scheduling:

A. Teaching. Classes have first priority with respect to scheduling. Final requests for dates during the Fall and Spring semesters and request for use of specific pieces of equipment during a semester are due no later than 30 days before the first day of classes.

B. Research projects that produce revenue for the FPDL. Research projects that will utilize the pilot plant (including its storage facilities) for any portion of the proposed work should develop a budget for the work based on the fee structure in Appendix I. Research project priorities are as follows:

1. Faculty and student research projects with funding.
2. Projects/product development for contracting companies/entities.
3. Miscellaneous projects that are funded (on a case by case basis).

C. Extension Workshops. Prior to finalizing the date for an extension work that will involve the pilot or dairy plant, the leader of the workshop should check with the Projects & Resources Coordinator/Support Technician and receive approval of the dates to ensure that they do not conflict with prior teaching and major research project commitments that have already been scheduled.

D. Other projects as established in consultation with the General Manager and Projects & Resources Coordinator/Support Technician.

Scheduling procedure:

A. Contact the Projects & Resources Coordinator/Support Technician and provide, at that time, a general description of needs (i.e., equipment, material, etc.).

B. Schedule and meet with the Projects & Resources Coordinator/Support Technician in advance of the work to discuss specific project needs (i.e., all equipment, time, utilities, space, personnel requirements). Scheduling of the FPDL is for equipment use and facilities support ONLY. No inference is made to offer technical support in any capacity. Technical support must be arranged by separate agreement between the person/company engaged in activity in the FPDL, and the faculty member(s) themselves. See Section XI.B. for more information regarding faculty managed industry projects.

IV. DRESS AND PERSONAL HYGIENE REQUIREMENT

General. Faculty, staff, and students should dress in a professional and hygienic manner at all times. Shorts, sandals, open toed shoes, should not be worn in the pilot plant. When working in the processing area, boots with steel toe protection should be worn. All jewelry, watches, rings, necklaces, ear rings, etc. should be removed before entering the FPDL. Good Manufacturing Practices should be followed, which includes no eating or drinking in the FPDL. The area is a food production facility and shall be treated as such.

A. Processing Lab. Faculty, staff and students.

1. White lab coats and hairnets for observation, classes, or maintenance purposes are required.
2. Full white apparel is required for participation and prolonged activity in the processing lab by students and staff that work routinely in the pilot plant. This apparel is to be provided by each lab group. Lab coats that are worn in a research lab, where they can be contaminated with nonfood grade chemical and pathogenic bacteria, should not be worn in the pilot or dairy plant.
3. Whites must be worn by those working routinely in the pilot plant.
4. Hair nets and beard nets are required at all times and are provided.
5. Men's and women's locker rooms are to be used to change into proper attire for the processing lab or dairy plant. These rooms must remain available for use by faculty, staff, and students using the processing laboratory or dairy plant. Locker assignments are made by the FPDL supervisor. Locks for personal use are not provided and must be provided by the individual.

V. MAIN PROCESSING AREA IN FPDL

A. Safety. The most common safety risks for new persons in the pilot plant are the hose stations. These are mixing stations for cold water and steam. The red knob is steam, NOT hot water. Every person must learn the proper and safe operation of the hose stations before working in the pilot plant.

B. Equipment. The equipment in the main processing area is divided into three categories: 1) equipment that is directly operated, maintained, and scheduled by the Projects & Resources Coordinator/Support Technician, 2) equipment that is directly used, operated, and maintained by a research group as part of a specific faculty research program, and 3) equipment that is owned by private companies under contract with the FPDL and under the supervision of the manager.

i. The major pieces of equipment in the FPDL that are operated and maintained by the FPDL are the spray dryer, the freeze dryer, the butter churn, the Tetra Rex milk packaging system, the cheese vats, the mozzarella cheese stretcher, the Micothermics UHT system, the two ice cream freezers and mix tanks, the two Gaulin homogenizers, the retort, the PMS Universal Pilot Plant, the DeLaval airtight cream separator, swept surface heat and cooling cone bottom tank, the two Multivac vacuum packagers, and the miscellaneous plate heat exchangers.

ii. Other equipment in the FPDL has been purchased and is supervised and operated by individual research programs. The use of this equipment is under the direction of the faculty member program responsible for that equipment. Current examples of this type of equipment are the Wenger extruder, all the membrane filtration systems, the high pressure CO₂ processing system, and the Lincoln impinger oven. The low temperature culture freezer was jointly purchased by the Dairy Plant and the Barbano research program and is not available for general use. Use of this equipment needs to be approved directly with the individual faculty member responsible for the equipment.

C. Utilities. Connection of all equipment and allocation of space for equipment is under the direction of the general manager and Projects & Resources Coordinator/Support Technician. Any unsafe utility connection or failure of any mechanical or other utility service should be reported immediately to the Projects & Resources Coordinator/Support Technician or the main office of the Food Science Department.

D. Security. The pilot processing area will be unlocked from approximately 7 am to 4:30 pm Monday through Friday. At other times, the pilot plant and storage areas will be locked. The doors should not be propped open. Authorized users of the FPDL will be issued a key to the FPDL processing areas and storage rooms. No one should be entering the facility from the doors on the ground floor that go directly outside. All entry should be from the hallway doors located inside the building. Minimal exiting through the doors that go directly outside is allowed for trash removal or other similar tasks, but these doors shall not be used for routine exiting of the facility.

E. FPDL Activities in Off-Hours. All off-hour (i.e., after 5 pm and before 6 am) activity needs to be scheduled and approved by the manager. If the off hour activity involves the use of a hose station or operation of processing equipment, then for safety reasons two people must be present at all times during the activity. One to carry out the activity and one to call for emergency help if there is an accident.

F. Clean Up. There is no contract cleaning in the FPDL. Groups generating trash are responsible for removing their own trash to the dumpster OUTSIDE between Stocking and Wing Halls. Trash does NOT go into the recycle bins on the loading dock. These two bins are for cardboard and paper recycling only. Groups are also responsible for cleaning of equipment and areas that they use to include exclusive use or partial-use storage rooms, unless prior arrangements are made and agreed upon. Research, teaching, and extension are expected to clean up the area and the equipment they use. This includes product on the floor, product caught in drain traps, and product on the surface of equipment. If equipment is not cleaned properly, then FPDL staff will re-clean the equipment and the program leaving the equipment or area dirty will be billed for cleaning. Routine cleaning of floors, walls, steam pipes, etc. is the responsibility of the FPDL staff.

G. Storage. The FPDL is a food processing, production, development, and research laboratory. As such it is designed to be an activity center, and not a storage location. Therefore, space in the FPDL shall not be used for storage of excess equipment or supplies. Providing storage other than outlined in Part VI below, is not the responsibility of the FPDL or staff.

VI. DRY STORAGE AREAS (FPDL and Dairy Plant)

A. There are two major dry storage areas for the FPDL one at the North end of the pilot plant on the same level as the processing area and one in the basement.

i. The storage area adjacent to the main processing area is for storage of parts and frequently used support equipment and supplies for the processing area. Carts on wheels for cheese making equipment, extruder parts, tools, and related small items should be stored in this area not on the pilot plant main floor. Small equipment parts that are not attached to assembled equipment should not be kept in the main processing area. This area is for equipment storage only, and is not to be used for general purpose storage or storage of laboratory supplies.

1. Due to limited space, all storage areas will be maintained and monitored by the Projects & Resources Coordinator/Support Technician unless 'exclusive use' agreements are in place.

2. Requests for storage of equipment should be made to the Projects & Resources Coordinator/Support Technician's office and removal of equipment from the storage area should be approved.

3. Metal storage racks on wheels are provided for plastic buckets and other containers used routinely in the main processing area. These utensils are to be cleaned after use and stored on these racks. They should not be placed on top of, or hung on, steam lines, electrical lines, or on processing equipment.

4. Storage of dry ingredients and supplies for specific research and teaching program must be approved by the Projects & Resources Coordinator/Support Technician and these items must be kept in the spaces designated for their storage.

5. All food ingredient materials must be kept in sealed containers. An opened bag of ingredients or packaging material in storage areas is unacceptable. Opened bags of ingredients and packaging materials need to be sealed in plastic or metal containers to avoid attracting insects and rodents. These containers need to be provided by the owner of the ingredient. All materials should be dated and labeled with the name and contact information. Open or improperly stored materials in dry storage areas will be removed and discarded during routine cleaning.

ii. The dairy plant has numerous separate storage areas for packaging materials, supplies, product inventory, ingredients, etc that must comply with state and federal regulations for licensed operation of the dairy plant. These storage areas are only to be used by dairy plant staff.

VII. ENVIRONMENTAL ROOMS, MACHINE ROOMS, AND FREEZERS

The environmental rooms 114, 115, 116, 117, 118, 119, and 121 in the FPDL and the -40 freezer (Room 120) and the -20 freezer in Stocking next to Room 178 are used by the FPDL. These are unlocked areas and may be designated for specific projects and activities.

The refrigerated storage Rooms 123 and 124 and the -20 freezer (Room 122) are used for locked storage of dairy plant inventory, in addition to the cooler and freezer in the Dairy Processing Plant.

All items stored in the FPDL environmental rooms should be food grade, unless the cooler is specifically designated for nonfood use.

Storage of items in these areas must be approved by the Projects & Resources Coordinator/Support Technician.

All items must be labeled with the name of the individual, the date, identification of the item, and faculty member responsible for the material and emergency contact number in case there is a refrigeration failure.

The temperatures in environmental rooms and freezers are adjusted and maintained by the University utilities maintenance staff. These are not to be adjusted by users. If a user observes a problem with one of these systems, it should be reported immediately to the Projects & Resources Coordinator/Support Technician.

Storage of pilot plant equipment parts and supplies in machine rooms is prohibited.

VIII. LOADING DOCK

The loading dock is a facility that serves all of Stocking Hall. It is for shipping and receiving, not for storage. Large items that have been received for the FPDL or Dairy Plant should be uncrated in the loading dock area to avoid wood splinters, nails, screws and other objects in the processing areas. The doors to the loading dock are to be kept closed when not being used. The doors between the loading dock and the hall are to be kept closed to keep insects out of the building and should be closed when the overhead doors are open.

An ice machine is located in the loading dock area. This machine serves the department. Ice should only be removed with a clean food grade scoop or bucket. If there is any problem with the ice machine, it should be reported immediately to the Projects & Resources Coordinator/Support Technician or to the main office of the Food Science Department.

IX. FPDL/DAIRY PLANT CHARGES TO FOOD SCIENCE DEPARTMENT ACTIVITIES

There will be a charge by the FPDL or Dairy Plant to teaching, research, and extension for staff time used in support of each activity. The fee schedules are listed on the "Price List" page.

Teaching. Pilot plant staff time to setup, operate, and clean equipment for teaching labs will be charged an hourly labor fee, plus the cost of supplies and ingredients. There will be no use charge for the equipment. The Projects & Resources Coordinator/Support Technician will provide the faculty member a cost estimate at the time the laboratory sessions are scheduled.

Research. For research-specific, non-industry projects, pilot plant staff time will be charged to set up, operate, and clean FPDL equipment for research projects when these services are requested, but no equipment use fee will be charged. If a faculty member is conducting a funded industry project, then the FPDL will charge for pilot plant staff time and an equipment use charge. The equipment use charge will be estimated when the activity is scheduled by the faculty member with the Projects & Resources Coordinator/Support Technician.

Extension. A nominal pilot plant use (per student or workshop specific - see Appendix 1) fee for extension workshops will be charged to all extension workshops and short courses to cover the cost of hair nets, lab coat cleaning, and cleaning supplies. In addition, pilot plant staff time will be charged at an hourly rate for all support and equipment use charges will added. An estimate of these charges should be made by the Projects & Resources Coordinator/Support Technician before the faculty or staff member schedules the workshop and these costs should be built into the workshop registration fee. If this is not done, the faculty member is still responsible for the actual FPDL costs incurred by the workshop.

X. FPDL/DAIRY PLANT CHARGES TO NON FOOD SCIENCE DEPARTMENT ACTIVITIES.

There will be a charge by the FPDL or Dairy Plant to teaching, research, and extension for staff time used in support of each activity based and an equipment use charge based on the fee schedules on the Price List page.

If a project is expected to exceed \$10,000, require a confidentiality agreement, or require a nondisclosure agreement, then the Food Science Business Manager MUST be consulted to see if SPS involvement is required.

XI. INDUSTRY PROJECTS (PROJECTS NOT NEGOTIATED AND MANAGED THROUGH SPS, WHERE THE COSTS WILL BE BILLED BY THE FPDL, DAIRY, OR THE FACULTY MEMBER'S PROGRAM)

A. FPDL/DAIRY PLANT MANAGED PROJECTS.

The FPDL and Dairy Plant will provide billing information for outside entities using the FPDL to the Business Office. All industry projects are billed at the standard rate, to include FPDL personnel rates and equipment usage rates.

1. Feasibility and Compatibility with Existing Programs.

The first step in deciding if the FPDL/Dairy Operation should agree to do an industry project is the feasibility of successfully doing the project. Both the technical capabilities of the FPDL/Dairy Plant staff and the capabilities of the equipment should be considered.

The second step in deciding if the FPDL/Dairy Operation should agree to do an industry project is the synergy of that project with the teaching, research, and extension program of the department. If the project to be carried out in the FPDL is unrelated to the department program, will place a large demand on the facility, staff time, and equipment, then it should be reviewed by the Department Chairman prior to providing an estimate or establishment of an agreement for the project.

2. Cost Estimates and Billing.

Each project will be priced for the specific job with a written estimate of all charges (see Price List), responsibilities, and deliverables. The bid will include the specific date(s) when the work will be conducted. This bid needs to be signed by the company representative or individual and returned at least two weeks prior to the scheduled work. Once the bid has been approved, if the activity for the specific day(s) is cancelled by the company or individual less than 7 calendar days prior to the scheduled work, then the company agrees to pay a cancellation fee equal to 50% of the estimate. If the company has an outstanding bill owed to the pilot plant that is more than 60 days past due, then payment of the past due bill will be required before any additional work can be estimated, scheduled, or initiated. Billing for pilot plant activities will be done by the Food Science Department Business Office. The Projects & Resources Coordinator/Support Technician is responsible for providing information so that timely billing can occur (within 7 days of completion of the project). A system of follow up to verify payment of bills at 60, 90, and 120 days and rebilling is the responsibility of the department financial management staff.

3. Limitations of Product Use.

Products produced in the FPDL are for internal use within companies contracting for the research. If any of the product will be used for human sensory work, then the contracting company must arrange for and complete appropriate microbiological and safety testing of the product prior to release of the product to the client.

Products produced in the Dairy Plant under licensed operation conditions within that environment will be released immediately and can be used for test marketing, consumer testing, or sampling at trade shows by the client and would comply with all the HACCP and product recall procedures in place for the Dairy Plant.

Any sensory work carried out at Cornell for a client on product produced in the dairy or pilot plant needs to be approved by the human subjects committee of the University by the standard procedures and should be carried out in cooperation with the Sensory Program in the Department of Food Science.

4. Reports.

The Projects & Resources Coordinator/Support Technician will provide the client with a written report for each project. The report will include all processing conditions and equipment used, the weights of ingredients used, product formulation, any test results, and any recommendations, problems, or comments. This report will be provided to the client within 7 days after the completion of the work, a copy will be provided to the Department Chair.

B. FACULTY MANAGED INDUSTRY PROJECTS

Some projects with companies or individuals require the specific expertise of a faculty member, use of the processing equipment that is part of a faculty member's research program, and the analytical support of the faculty members program. In this case, the faculty member will work directly with the client on the project. Work carried out in the pilot plant in a faculty managed industry project needs to be scheduled in advance with the Projects & Resources Coordinator/Support Technician to avoid conflicts with previously scheduled activities. If pilot plant equipment or staff time is required for the project, then it is the responsibility of the faculty member to arrange for this support with the Projects & Resources Coordinator/Support Technician and to pay for this support. A pilot plant equipment usage fee will be billed to the faculty member as if the project had been carried out as an FPDL project to keep the billing rates for use of FPDL equipment consistent (see Appendix 1).

The faculty directed industry project must comply with all the policies and procedures of the FPDL, Department, and University.