

UCDAVIS

FOOD SCIENCE AND TECHNOLOGY

Anheuser Busch InBev Pilot Brewery Use Policy

University of California, Davis
August A. Busch III Brewing & Food Science Laboratory

Anheuser Busch InBev Pilot Brewery (Pilot Brewery)
Department of Food Science & Technology

June 10th, 2020

Personnel:

Pilot Brewery Manager – Joseph Williams

Assistant Brewer – Kelly Scott

1. Goals:

- a. To create a professional environment in which teaching, research, outreach and extension activities can be conducted in a support of the mission of the Department of Food Science & Technology at UC Davis. The activities of the Pilot Brewery must generate sufficient economic returns to cover Pilot Brewery employee salaries and enable appropriate maintenance of the facilities. As such, Pilot Brewery priorities are as follows:
 - i. Teaching:
 - 1. To provide hands-on learning experiences for students enrolled in Food Science & Technology and related curricula.
 - ii. Research:
 - 1. To provide a state-of-the-art facility and technical assistance for conducting food related research at the testing/research/pilot brewery level of production.
 - 2. To assist in the transfer of new technology from the research program to the industry.
 - 3. 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.
 - iii. Outreach/Extension:
 - 1. To provide facilities for use in applied extension research and continuing education programs.

2. Authorized Personnel- Processing Area, Environmental Rooms, and Storage Rooms:

- a. Every person that works in the pilot brewery should have safety training specific to the pilot brewery environment (Pilot Brewery Safety Orientation Manual) and an orientation training covering appropriate aspects of the pilot brewery 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 brewery. The Pilot Brewery manager (or designee) will provide this training.

- b. Visitors should always be accompanied by a person authorized to be in the pilot brewery. For liability reasons, persons that are not students, staff, people holding contracts for product development/research activities, or officially enrolled in a cooperative extension short course of the University are not allowed to work in the pilot brewery. 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 & Technology are being handled and conducted through the Robert Mondavi Institute. Please contact Babette Orendain at brorendain@ucdavis.edu. All members of a tour group must be 12 or older. Children under the age of 12 are not allowed in the pilot brewery processing areas.

3. Authorized Activities and Materials:

- a. Only activities approved and scheduled by Pilot Brewery Manager will be allowed in the pilot brewery.
- b. All activities in the pilot brewery 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 Pilot Brewery 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 brewery areas. They should be stored in the chemical/glycol storage room (1109E).
- d. Specific training is required for operation of the forklift in the Pilot Brewery. If you have not been trained and do not have a training certificate do not operate these devices.
- e. The overhead door should only be opened to bring in or remove large pieces of equipment from the pilot brewery as authorized by the Pilot Brewery Manager. Opening the overhead door allows insects and birds to enter the processing area.
- f. Equipment and supplies that are packaged in wood or cardboard shipping containers should be received in the driveway area and the packing materials should be removed in the receiving area, not in the pilot brewery. Nails, screws, metal straps, wood, and other packing materials should not be brought into the processing area.
- g. All activities carried out by students and department staff in the pilot brewery should be scheduled. Only students and staff that have scheduled activities should be working in the Pilot Brewery.

4. Scheduling:

- a. The Food Science & Technology Department website <http://foodscience.ucdavis.edu/> has a link labeled “Facilities”, follow that to the “Anheuser Busch InBev Pilot Brewery”. Please click this link to see pictures of the equipment, equipment capabilities, equipment rate info, contact info, and a pdf style form for project inquiry that gets filled out by the prospective user

(description of project, user, equipment needs, utility needs, duration of project, storage, etc.) and emailed to the Pilot Brewery Manager for evaluation and feasibility.

b. Priority in Scheduling:

i. Teaching:

1. Classes have first priority with respect to scheduling. Final requests for dates during the Fall, Winter and Spring quarter and request for use of specific pieces of equipment during a quarter are due no later than 21 days before the first day of classes.

ii. Research:

1. Research projects that produce revenue for the Pilot Brewery. Research projects that will utilize the Pilot Brewery (including its storage facilities) for any portion of the proposed work should develop a budget for the work based on the rate structure.

iii. Cooperative Extension Workshops:

1. Prior to finalizing the date for the cooperative extension work that will involve the pilot brewery, the leader of the workshop should discuss the project/demo and the costs associated with performing the demo or running the project in the Pilot Brewery with the Pilot Brewery Manager 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.

iv. Other projects as established in consultation with the Pilot Brewery Manager.

c. Scheduling Procedure

- i. Fill out the “Use Request Form” on the Anheuser Busch InBev Pilot Brewery page of the Food Science & Technology website and email to the Pilot Brewery Manager. The Pilot Brewery manager will be in touch regarding project feasibility, scheduling, and cost.
- ii. Scheduling of the Pilot Brewery 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 Pilot Brewery, and the faculty member(s) themselves. See Section 11 (b). for more information regarding faculty managed industry projects.

5. Dress and Personal Hygiene Requirement:

a. General:

- i. Shorts, sandals, open toed shoes, should not be worn in the pilot brewery. Good Manufacturing Practices should be followed, which includes no eating or drinking in the Pilot Brewery. The area is a food production facility and shall be treated as such.

b. Disease control:

- i. Any person who, by medical examination or supervisory observation, is shown to have, or appears to have, an illness, open lesion, including boils, sores, or infected wounds, or any other abnormal source of microbial contamination by which there is a reasonable possibility of food, food-

contact surfaces, or food packaging materials becoming contaminated, shall be excluded from any operations which may be expected to result in such contamination until the condition is corrected. Personnel shall be instructed to report such health conditions to their supervisors.

c. Cleanliness:

- i. All persons working in direct contact with food, food-contact surfaces, and food packaging materials shall conform to hygienic practices while on duty to the extent necessary to protect against contamination of food. The methods for maintaining cleanliness include, but are not limited to:
 1. Wearing outer garments suitable to the operation in a manner that protects against the contamination of food, food-contact surfaces, or food-packaging materials.
 2. Maintaining adequate personal cleanliness.
 3. Washing hands thoroughly in an adequate handwashing facility before starting work and at any other time when the hands may have become soiled or contaminated.
 4. Storing clothing or other personal belongings in areas other than where food is exposed or where equipment or utensils are washed (lockers are available in the men and women's restrooms or leave belongings in the classroom).
 5. Taking any other necessary precautions to protect against contamination of food, food-contact surfaces, or food-packaging materials with microorganisms or foreign substances including, but not limited to, perspiration, hair, cosmetics, tobacco, chemicals, and medicines applied to the skin.

6. Main Processing Area in Pilot Brewery:

a. Safety:

- i. A common safety risk for new persons in the Pilot Brewery are the steam hose stations. These are mixing stations for cold water and steam. Every person must learn the proper and safe operation of the hose stations before working in the pilot brewery.
- ii. Surfaces may be hot even if they do not look like it. Be cautious before touching anything.
- iii. CO₂ is used in the Pilot Brewery and is a health hazard. Be aware of CO₂ hazards.

b. Utilities:

- i. Connection of all equipment and allocation of space for equipment is under the direction of the Pilot Brewery Manager. Any unsafe utility connection or failure of any mechanical or other utility service should be reported immediately to the Pilot Brewery Manager or UC Davis Facilities (530-752-1655).

c. Security:

- i. The AAB III building will be opened from 8am-5pm Monday-Friday. The Pilot Brewery and storage areas will be locked, if access is necessary it is best to work out schedule in advance with Pilot Brewery Manager. The doors should not be propped open. Authorized users of the Pilot Brewery

will be issued a card key to the Pilot Brewery processing areas and storage rooms.

d. Working Alone in the Pilot Brewery:

- i. Anyone working alone in the Pilot Brewery must follow the Working Alone SOP. They must first have this activity approved by the Pilot Brewery Manager and complete Pilot Brewer safety training prior to starting work.

e. Clean Up:

- i. There is no contract cleaning in the Pilot Brewery. Groups generating trash are responsible for removing their own trash to the dumpster OUTSIDE in the trash area (South side of the building).
- ii. 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.
- ii. If equipment is not cleaned properly, then Pilot Brewery 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 Pilot Brewery staff.

f. Storage:

- i. The Pilot Brewery is a brewing, development, and research laboratory. As such it is designed to be an activity center, and not a storage location. Therefore, space in the Pilot Brewery shall not be used for storage of excess equipment or supplies. Providing storage other than outlined in Section 6 below, is not the responsibility of the Pilot Brewery or staff.

7. Equipment Storage and Dry Storage Areas:

a. General:

- i. Due to limited space, all storage areas will be maintained and monitored by the Pilot Brewery Manager unless 'exclusive use' agreements are in place.
- ii. Requests for storage of equipment should be made to the Pilot Brewery Manager's office and removal of equipment from the storage area should be approved.
- iii. Equipment and utensils should not be placed on top of, or hung on, steam lines, electrical lines, or on processing equipment.
- iv. Storage of dry ingredients and supplies for specific research and teaching program must be approved by the Pilot Brewery Manager and these items must be kept in the spaces designated for their storage.
- v. 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.

- b. Mill Room – 1109B:
 - i. Anything stored in the mill room must be stored so that it does not attract pests.
- c. Dry Storage Room – 1109C:
 - i. For overflow, unopened malt bags as well as hops, parts and equipment, glassware, and tools.
- d. Cold Storage Room – 1109D:
 - i. For packaged product and storage of excess refrigerated ingredients.
- e. Chemical & Glycol Room – 1109E:
 - i. Any chemicals stored must have a secondary storage container and be kept off of the bare floor. Anything stored in this room must not obstruct a clear line of access or exit to anything stored in this room.

8. Cold Room:

- a. General:
 - i. The cold room, 1109D, is a locked area and may be designated for specific projects and activities.
 - ii. Storage of items in these areas must be approved by the Pilot Brewery Manager.
 - iii. All items must be labeled with the name of the individual, the initial/removal storage date, identification of the item, and emergency contact number in case there is a refrigeration failure.
 - iv. The temperatures in environmental rooms and freezers are adjusted and maintained by the Pilot Brewery Manager and/or 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 Pilot Brewery Manager or UC Davis Facilities (530-752-1655).

9. Receiving Area's:

- a. Pilot Brewery Receiving Area:
 - i. The receiving area is a on the South side of the AABIII facility.
 - ii. The first two driveways on the right are for California Processing Tomato Industry Pilot Plant and Milk Processing Lab operations.
 - iii. Items should be uncrated in the receiving area to avoid wood splinters, nails, screws and other objects in the processing areas. The roll-up doors to the receiving area are to be kept closed when not being used.
- b. Brewery Operations Receiving Area:
 - i. The receiving area is a on the South side of the AABIII facility.
- c. The 3rd driveway on the right is for ALL brewery operations/deliveries.

10. Pilot Brewery Charges to Food Science & Technology Department Activities:

- a. General:
 - i. There will be a charge for using the Pilot Brewery facility for teaching, research, and cooperative extension, and for staff time used in support of each activity. The recharge rates and usage fee are available upon request (rates are subject to change over time).
- b. Teaching:
 - i. Pilot Brewery 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, and equipment. The Pilot Brewery Manager will provide the faculty member a cost estimate at the time the laboratory sessions are scheduled.

- c. Research:
 - i. If a faculty member is conducting a funded industry project, then the Pilot Brewery will charge for Pilot Brewery 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 Pilot Brewery Manager.
- d. Cooperative Extension:
 - i. A nominal Pilot Brewery use (per student or workshop specific) will be charged to all extension workshops and short courses to cover the cost of equipment use, consumables, and cleaning supplies. In addition, Pilot Brewery staff time will be charged at an hourly rate for all support. An estimate of these charges should be made by the Pilot Brewery Manager 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 Pilot Brewery costs incurred by the workshop.
- e. Pilot Brewery Charges to Non Food Science & Technology Department Activities:
 - i. There will be a charge by the Pilot Brewery to teaching, research, and extension for staff time used in support of each activity and an equipment use charge based on the recharge rates and usage fee. These rates are available upon request (rates are subject to change over time).
 - ii. If a project is expected to require a confidentiality agreement or require a nondisclosure agreement, then the Food Science & Technology Business Manager MUST be consulted to see if any other documentation/involvement is required, and please keep in mind that this process has to be approved by a division of UC Davis purchasing and that this process can take up to 2 weeks.

11. Industry Projects:

- a. General:
 - i. The Pilot Brewery will provide billing information for outside entities using the Pilot Brewery to the Business Office. All industry projects are billed at the standard rate, to include Pilot Brewery personnel rates and equipment usage rates; the recharge rates and usage fee are available upon request (rates are subject to change over time).
 - ii. Feasibility and Compatibility with Existing Programs:
 - 1. The first step in deciding if the Pilot Brewery should agree to do an industry project is the feasibility of successfully doing the project. Both the technical capabilities of the Pilot Brewery staff and the capabilities of the equipment should be considered.
 - 2. The second step in deciding if the Pilot Brewery 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 Pilot Brewery 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 Pilot Brewer Manager prior to providing an estimate or establishment of an agreement for the project.

iii. Cost Estimates and Billing:

1. Each project will be priced for the specific job with a written estimate of all charges (recharge rates and usage fee are available upon request and rates are subject to change over time), 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. If any cancellation after the bid has been signed the company will be charged for any materials and prep that has taken place prior to the project starting. Please keep in mind the bid process must be approved by a division of UC Davis purchasing and this process can take up to 2 weeks.

iv. Limitations of Product Use:

1. Products produced in the Pilot Brewery 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.
2. Any sensory work carried out at UC Davis for a client on product produced in the pilot brewery needs to be approved by the UC Davis Office of Research. Please refer to their website for standard procedures that should be carried out in cooperation with the Sensory Program in the Department of Food Science & Technology.

b. Faculty Managed Industry Projects:

- i. 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 brewery in a faculty managed industry project needs to begin by filling out the Pilot Brewery "Use Request Form". The Pilot Brewery facility, equipment usage fee, and potential staff time will be billed to the faculty member as if the project had been carried out as a Pilot Brewery project to keep the billing rates for use of Pilot Brewery equipment consistent.
- ii. The faculty directed industry project must comply with all the policies and procedures of the Pilot Brewery, Department, and University.