Human and Agricultural Biosciences Building One (HABB1)

Food Science & Technology Pilot Plant Equipment

The following equipment is available:

**Food Processing Pilot Plant:**
- Single head volumetric piston filler variable fill up to 160 fl oz. – Simplex AV 100
- Impingement Oven – Lincoln Model 1302 Conveyor 16”x50”
- Lightning Mixer
- Spray Drier – GEA Niro Mobile Minor
- Single Chamber Vacuum Packaging Machine w/MAP capabilities – Koch X200
- Precision Oven – ThermoScientific
- 40 gallon Jacketed Vat with mixer
- 60 Gallon COP Tank
- Environmental Rooms: 180 sf of 0-10°C storage, 90 sf of -20°C storage
- HillPhoenix Walk-in Cooler 8’x8’x8’
- HillPhoenix ONRB 8’ refrigerated display case
- HillPhoenix ON5DMX 8’ refrigerated display case
- Multivac R-120 Thermoforming Packaging
- Proseal GTRe Semi-Automatic 2 station rotary tray sealing (Atmospheric, MAP, VMAP, Skin, Skin+, Skin Deep)
- Rational 5 Senses SCC WE 62 E Oven
- Merry Chef eikon e4 Commercial Convection Microwave (1500W MW, 3200W Convection @ 2450Hz)
- GE Profile JES2251SJ02 2.2 cf Microwave (1200W)
- Stainless Steel Work tables, 8’ and 6’ lengths
- Commercial Dishwasher

*Equipment in room but not yet connected to utilities:*
- Pasteurizer – APV (SR15S, wo 33161)
- UHT/HTST Pasteurizer w/clean fill hood – Microthermics Lab 25-D
- In-Line Homogenizer – GEA Niro Soavi/Microthermics
- Stock Rotary Retort
- 60 gallon Steam Jacketed Kettle
**Food Safety Pilot Plant, BSL2 Certification:**

- Recirculating Brine Chiller – GCI Icewagon
- Stainless Preparation Tables
- Stainless Steel 3 compartment sink
- Refrigerated Delicase - Fogel
- Deli Slicer - Hobart
- Single Chamber Vacuum Packager – Koch Ultravac 250
- Pilot Scale Ethylene Oxide Fumigation Chamber - Custom
- Pilot Scale Dry steam sterilization chamber - Custom
- CO₂ Incubator, reach-in – Fisher Forma 13950
- Biosafety Cabinet
- Steris Pass through Sterilizer
- UV Light system w/pump – Aquionics
- Alkar M1000 Oven
- Middleby Marshall 570S Impingement Oven

**Malting, Brewing and Distilling Equipment**

Custom 3 stage malting system:
- **Capacity:** with dividers 8 ea. 2.5kg, without dividers: 23 to 70kg per batch
- **Steeping with aeration**
- **Germination with aeration/humidity control**
- **Kilning – temperatures capable of producing pale malts**

2.5 hectoliter Esau & Hueber brewery:
- **Knockout Capacity:** 2.5 hectoliters/brew
- **Two Vessel Brewhouse:**
  - Mash tun/Kettle/Whirlpool (Temperature controlled mash tun capable of stepped mashes)
  - Lauter Tun with V Screens and rake system
- **Pleat Heat Exchanger for wort cooling**
- **Oxygenation Stone with flow control**
- **Hot and Cold Liquour tanks**
- **2 roller mill and grain pre-milling hydration mixer**
- **Temperature regulated Fermentation Vessels** (total capacity = 8 brews, 2 brews per FV, 20 Hectoliters total)

30 Liter Arnold Holstein Distillation Apparatus:
- **Copper Kettle, Pot Still + Changeable Helmet, steam heated**
- **Distilling column #1 with 10 bubble plates, and dephlegmator**
- **Distilling column #2 with 4 bubble plates, mash return tube and dephlegmator and catalyzer**
- **Tubular Condenser Column**

*April 5, 2016*