



Human and Agricultural Biosciences Building One (HABB1) Food Science & Technology Pilot Plant Equipment

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

Semi-Automatic 2 station rotary tray sealing (Atm., MAP, VMAP, Skin, Skin+, Skin Deep) (MAY 2017)

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

Middleby Marshall 570S Impingement Oven

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

Kitchen Aid Range Dual Fuel, 4 Natural Gas Burners, w/Electric Griddle, Convection (KKDRS463VSS)

Henny Penny 500 Pressure Fryer

(Continued)

Invent the Future

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/Smokehouse

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