

Process Equipment Supported Capabilities
for Food and Industrial Applications

Ambient and Heated Mixing
Atmospheric and Vacuum Canning
Batch and Continuous Centrifugation
Blanching
Coating
Comminuting
Compression Molding
Culinary Steam
Cutting
Emulsifying
Extrusion (Single and Double Screw)
Fermentation
Fiber Spinning
Filtration (Ultrafiltration, Reverse Osmosis)
Freeze Drying
Freezing
Heat Transfer
Homogenizing / Emulsification
Milling
Pasteurizing
Peeling
Plastics Molding and Extrusion
Puffing
Reverse Osmosis
Screen Separation
Size Reduction
Solvent Extraction
Solvent Processing
Spray Drying
Ultra Filtration
Ultrasonic Treatment
Vacuum Evaporation
Materials Testing Instrumentation

Working space physical overhead varies from one to four stories. Research bays may be compartmentalized for confidentiality. An acre (45,000 square feet) of total floor space.

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Celebrating
75
Years

WRRC
PILOT PLANTS
A UNIQUE RESOURCE



United States Department of Agriculture
Agricultural Research Service
Western Regional Research Center



Industrial & Food Processing

Partnerships

We are eager to explore new partnerships that would make use of the WRRC Pilot Plants in such areas as development of new biobased products, biofuels and bioenergy from agricultural products/byproducts; new healthy food forms utilizing fruits, vegetables, and cereal grains; and water and energy-efficient new methods for food processing and preservation. Partnerships may take the form of Cooperative Research and Development Agreements, Trusts, and Reimbursables.

Resources

Specifically defined areas are available for safe and confidential processing of agricultural crops and marine products leading to edible food products and non-food biobased products and fuels. The space is flexible allowing use of modular equipment as well as the assembly of coordinated process sequences. The pilot labs are equipped with process equipment representing most important unit operations needed for foods and crop conversion and component separation.

History

Past collaborations have led to ground-breaking products and advances. The WRRC R&D Facility was first used in the early 1940's. The facility played a key role in the advancement of freezing, drying and blanching technologies. In 2002, WRRC received an American Chemical Society, National Historic Chemical Landmark award for its role in the development of frozen foods.



Persimmons ready for drying



Tara McHugh, Research Leader



Bill Orts, Research Leader



Ginger-carrot film sushi roll

Food Processing

Equipment	Capability
Steam Blancher	Blanching
Atmospheric/Vacuum Canner	Canning
Laboratory Coater	Coating
Comminuting Processor	Cutting, Slicing, Chopping
Culinary Steam Producer	Culinary Steam
Twin Screw Extruder	Food Product Extrusion
Filter Press, Paddle Finisher, Vibratory Sieve	Filtration
Separator	Reverse Osmosis/Ultra Filtration
Drying Freeze Drier	Freezing
Cabinet Freezer	Freezing
Heated Mixer, Steam Injector	Heating
Ambient, Heated and V Mixer	Mixing
Plate Exchanger, Pasteurizer	Pasteurizing
Peelers	Peeling apples, potatoes
Puffer	Puffing
Filter	Reverse Osmosis, Ultra Filtration
Paddle Finisher, Vibratory Sieve	Separation
Spray Drier/Chiller	Spray Drying
Ultrasonic Immersible System	Ultrasonic Treatment

Industrial Processing



Greg Glenn & Artur Klamczynski



Guayule Tire

Equipment	Capability
Twin Screw Extruder	Compounding Plastic, Fiber & Starch
1" Single Screw Extruder	Extruding Materials
¾" Single Screw extruder	Extruding Materials
Pelletizer	Pelletizing, Size Reducing
Roll Take Off	Auxiliary Extrusion Equipment
Take Off System, 2 Units	Auxiliary Extrusion equipment
Take Off Belt	Auxiliary Extrusion equipment
Injection Molding Unit	Injection Molding
Cryo Mill	Size Reduction, Fine Milling
Mill	Size Reduction
Jet Cooker	Fast Cooking in Jet of Steam
Hot Press	Pressing, Film Making
Melt Mixer	Compounding
Press	Pressing, Concrete Testing
Feeder	Auxiliary Extrusion Equipment
Respirometer	Decomposition, Respiration, Tests
BioFlo IV Reactor	Bioreactor
Assorted Tanks	Storage
Mixer	Mixing, Dough Development