

## **GSRREC at Fort Valley State University, Fort Valley, GA**

The Georgia Small Ruminant Research and Extension Center (GSRREC) at Fort Valley State University, the University System of Georgia, Fort Valley, GA has been a Center of Excellence in Small Ruminant (Dairy and Meat) research in the nation. The huge investments by the state of Georgia and USDA in the dairy and meat goat technology research facilities at FVSU warrant our teaching and research to be “cutting edge” educational facilities and faculty and staffs. These state-of-the-art creamery and meat processing facilities and equipment at the GSRREC have significantly enhanced our instructional and research capabilities.

The dairy and meat technology facilities have an array of latest equipment for instructional and research purposes, which include: HPLC, gas chromatography, near infrared reflectance (NIR) spectroscopy, texture analyzer, scanning spectrophotometry units, atomic absorption spectroscopy, vacuum packager, Babcock fat analyzer, pH meter, shaker bath, autoclaves, incubators, UV spectrophotometer, electronic analytical balance, colony counter, vario MAX CN elemental analyzer, exhaust hoods, etc. In addition, there is a state-of-the-art sensory laboratory equipped with computers installed with Compusense software for sensory studies. In addition, the Creamery at GSRREC is equipped with many milk processing equipment, including a 200 gal. milk storage tank, 2 vat pasteurizers (50 and 100 gal.), homogenizer, cream separator, 60 gal. cheese vat, cheese press, cheese mill, vacuum packager, fluid milk packager, movable whey drainers, new Labconco freeze dryer, walk-in-cooler, and a complete CIP system. Furthermore, approximately \$400,000 worth of recent models of highly advanced dairy processing equipment (Armfield, Inc.), such as a UHT-HTST pasteurizer, advanced atomizing sprayer dryer, multi-ingredient processor/mixer and homogenizer, have been procured recently.

The 15,000-square-foot GSRREC building is also equipped with an abattoir that can process small and large ruminants as well as swine. This unit will not only provide teaching and research facilities for evaluating meat products, but will also offer custom slaughter services to Georgians. The facility has two large coolers, meat cutting, processing, aging, and storage rooms, having vacuum packing, cubing, deboning, grinding, and smoking units. Laboratory exercises and research projects of meat processing and products development can be easily conducted or demonstrated in these meat technology facilities. This building also has a computerized sensory laboratory, 10 office spaces, a 50-seat capacity conference/classroom, an outlet store, two break rooms, and two large rest rooms with 12 lockers. The laboratories have office spaces for graduate students. All laboratories are fully furnished and equipped with explosive proof and chemical resistant fume hoods, wall cabinets and laboratory benches.

In addition, the Food Engineering Laboratory at the Agricultural Research Station at FVSU has a controlled-access, self-contained laboratory with instrumentation required for the proposed Food Science program, including SteriPulse<sup>®</sup>- XL 3000 Pulsed Sterilization System, Instron Universal Testing Instrument 4500, freezers, incubators, Omegascope infrared thermometer, Bio Flo 110 bioreactor, KD2 Pro Thermal Analyzer, near infrared grain analyzer, Flash&Go automated colony counter, Eddy Jet spiral spreader, DSC Q<sub>10</sub>, as well standard laboratory apparatus. The laboratory is also equipped with a thermocycler, a spectrophotometer, and a real time PCR machine with a dedicated computer and primer design software and hardware. The Lab has been rated and approved as meeting the requirements of a Biohazard Level II Laboratory.

## Dairy Goat Research Facility – Creamery and Three Dairy Goat Barns



## Fort Valley State University – Dairy Processing Plant Facilities and Equipment



**Milking Parlor**



**Two Milk Bulk Tanks**



**Batch Pasteurizer & CIP Tank**

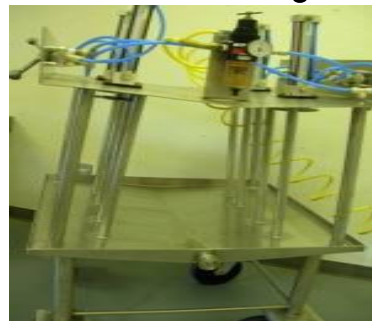
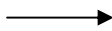


**Cheese Vat**



**Fluid Milk Packager**

**Cheese Press**



**Walk-In-Cooler**



**Georgia Small Ruminant Research & Extension Center - Slaughterhouse Bldg.**



**Side View**



**Front View**



**Animal Waiting Facility**



**Animal Stunning Facility**



**Slaughter and carcass processing facility**



**Meat Processing Room**



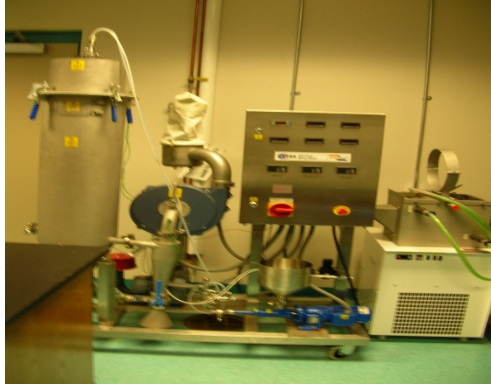
**Meat Cutter**



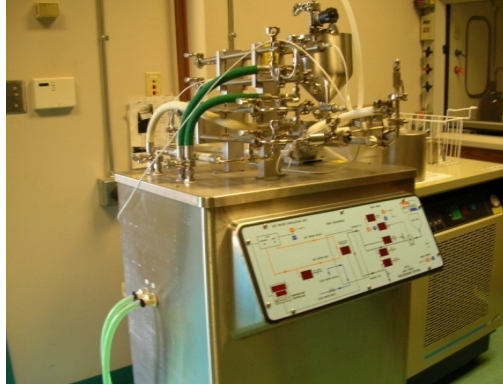
**Carcass Chill Room**



# Food Science Laboratory equipment and facilities in Meat Technology Building-FVSU



**Spray Dryer – Laboratory Model**



**UHT –HTST Pasteurizer**



**Dairy Ingredient Mixer**



**HPLC – Hewlett Packard**



**Sensory Evaluation Laboratory**



**GC-MS – Thermo Electron Corp.**



**Dr. Park demonstrates Protein Separation to Students**



**Texture Analyzer**



**Centrifuges and Rotary Evaporator**