

# Swine Research and Education Center

The Swine Research and Education complex is one of four animal facilities operated by the Animal Sciences Department at Auburn University. Combined with the Stanley Wilson Beef Teaching Unit, the Beef Cattle Evaluation Unit and the Horse Unit, the Swine Research and Education Center provides hands-on educational experiences and opportunities for a wide range of Extension and research projects.

## Swine Research and Education Center

The main center contains a feed mill, waste handling/treatment/storage facilities, a test feed barn, and equipment storage, all outside of the biosecure perimeter. Inside the perimeter is the office/lab building, breeding/gestation, farrowing, nursery and finishing.

### “Outside” facilities

1. feed mill – feed processing and bulk ingredient storage. Batch size ranges from 300-600 pounds and 1000 to 3000 pounds. Primary ingredients are corn, soybean meal and commercial base mixes.
2. waste handling – all manure flows to a central manure handling system. It is directed to the single-cell anaerobic lagoon, or a concrete storage tank. Manure in the tank can be agitated and pumped to land application equipment or processed through a solid separator. Separated solids are available for land application or composting. The effluent goes to the lagoon. Lagoon effluent is used to charge the pits in all animal barns, and as a fertilizer for approximately 4 acres of Russell bermudagrass hayfield.
3. test feed barn – an open sided, partially slatted barn is available for testing experimental feeds. When completed, pens will house 1 to 3 pigs from 50 to 250 pounds. Pigs must come from the main unit, but cannot return.
4. equipment storage – located in three old structures, storage is adequate for all maintenance equipment for the complex as well as experimental penning, feeders, etc. not in use.

### “Biosecure” facilities

1. office/lab building – center office, dressing rooms, showers and break room for center staff and visitors. The surgery suite includes a surgeon preparation room, animal preparation and recovery rooms, and a 280 square foot surgery. The building also includes an intensive animal room, and an outside animal holding area. Entrance to these rooms require showers, and use of center-provided clothing. Included in the office/lab building but not included in the biosecure area is a multi-purpose room with projection video capabilities, and a tissue culture room with pass-through access to the surgery.
2. breeding/gestation barn – includes 4-8’X8’ boar pens, two 8’X16’breeding pens, 48 2’X7’ gestation stalls and 12 8’X12’ gestation pens. Flooring is partial solid concrete, partial concrete slats. Two fans provide ventilation. Cooling is provided by 4 fans and a drip/sprinkle system. In case of a power outage, the curtain

walls have an emergency drop. A controller located outside the room with animal level sensors in the room operates all ventilation and cooling fans. Another controller operates the drip cooling system. Four bulk feed bins serve both the gestation and farrowing barns.

3. sow handling area – located between the breeding/gestation and farrowing barns and used for sow preparation (washing, vaccinating) and treatment. May also be used to view animals.
4. farrowing room – 18 farrowing pens with 2'X7' sow stalls and two 1.5'X7' creep areas. Flooring for sows is cast-metal, and plastic for pigs. Zone heat for pigs provided by radiant heaters and creep mats. Two fans provide ventilation. A gas heater provides supplemental heat for the sows, and drip cooling is available as well. A controller located outside the room with animal level sensors in the room operates all ventilation fans and gas heater. Another controller operates the drip cooling system.
5. nursery room – 18 4'X8' pens with fence line feeders (1 feeder for 2 pens) and plastic flooring. Outside feed storage will handle up to 3 diets, and are augured into the room. Two fans provide the ventilation, and a gas heater provides supplemental heat. A controller located outside the room with animal level sensors in the room operates all ventilation fans and gas heater.
6. grow-finish room – 28 7'X14' pens with fence-line feeders and concrete slat flooring. Outside feed storage will handle up to 4 diets. Two bins serve each side of the barn, with augurs directly from the bin to feeders. One fan provides minimum ventilation requirements, with six additional fans available for cooling. A controller located outside the room with animal level sensors in the room operates all ventilation and cooling fans. Another controller operates the drip cooling system.
7. animal loading – an animal loading area is located at the entrance to the grow-finish barn. This area doubles as an animal viewing area.

### **Swine Evaluation Station**

Originally built for performance testing boars, one room is suitable for use. It contains 9 12'X12' pens with solid concrete floors requiring daily scraping/washing. Bulk feed storage is available (one bin), and self-feeders must be manually filled. This barn serves as an isolation area for newly purchased breeding stock, but may be available for projects.

### **North Auburn pasture**

Approximately 30 acres of unimproved perennial grasses. Electricity is available to the “portable” office building. Water comes from an on-site well. A high-tensile perimeter fence with two insulated, charged wires surrounds the pasture. Portable feeders and waterers are available for up to 8 paddocks. Pigs can be produced by the SREC, or purchased as needed.

## **SREC Production Plan**

**Production schedule** – 35-day barn schedule, 147-day farrowing interval, 114 day gestation, 28-day lactation, 3 to 5 day weaning to rebreeding, 33 days in the nursery and up to 120 days in grow/finish

**Genetics** - Yorkshire females bred to Yorkshire or terminal sires (100 females, 4 boars at capacity)

**Gilt management** – selected at 168 days of age and moved to pens in the breeding/gestation barn, available for mating at 194-215 days

**Boar management** – boars under 8 months are used only 1 time per day. Boars over 8 months are used up to 2 times per day. Any boar used 5 consecutive days gets 3 days rest.

**Breeding management** – sows are weaned and placed in gestation stalls. Heat check begins on the day after weaning. Breeding will begin 12 to 24 hours after heat is detected. All sows will be bred at least once using AI. Second service follows at 12 to 24 hours after first service. Eighteen days after first service, heat check begins with a boar and continues to 24 days after the last service. All pregnant females are checked with ultrasound 42-49 days after first service.

**Farrowing/lactation** – Sows and gilts are fed a farrowing diet one week prior to farrowing and 2 days after farrowing. They are washed and moved to the farrowing barn approximately 4 days prior to farrowing. We will produce 12 to 14 live pigs per litter, and should wean 10-12. at 28 +/- 2 days of age averaging 25 pounds. Within 24 hours of birth, pigs will be weighed, ear notched, injected with iron and tails clipped (commercial pigs only). At 7 days of age, pigs are vaccinated, commercial males are castrated and creep feed is offered. On weaning day, sows will move to the breeding/gestation barn. Pigs will be weighed for weaning. Marketing arrangements for pigs will be made at weaning.

**Nursery** – Pigs are sorted by weight and sex and placed in the nursery, up to 12 pigs per pen (40 pounds exit weight) or 10 pigs per pen (50 pounds exit weight). After 32 days, pigs will either move to the grow/finish barn or be sold.

**Grow/finish** – Pigs will move from the nursery to grow/finish with only minor changes in sort. Due to restricted grow/finish space, pigs from alternating groups will be sold (excluding replacement animals, or pigs assigned to a research project). Pigs kept stay in the grow-finish barn for no more than 120 days. Replacement gilts will move to the breeding/gestation barn after 100 days on feed. All other pigs will be shipped.