

Swine Research & Teaching Center

Department of Animal Sciences

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**Overview**

The UW Swine Research & Teaching Center (SRTC) provides integral support for research, teaching and extension programs. This facility is dedicated to promotion of a progressive swine industry in Wisconsin and the Midwest. Research is expected to solve problems related to swine genetics, reproduction, behavior and management. Education will provide information and an opportunity to learn through first-hand experience. The facility is used in short course, undergraduate, graduate, and extension education.

The SRTC is an AAALAC accredited facility within the Department of Animal Sciences and the College of Agricultural and Life Sciences at the University of Wisconsin-Madison. The SRTC houses a 250-sow breeding herd, with a total capacity of over 1,500 pigs. The facility includes four animal wings, an education wing and a core support area with surgery and laboratory space; totaling over 40,000 sq. ft.

**Animal Health and Biosecurity**

Access to the facility is strictly controlled to limit risks of introducing diseases to the herd. Animals can only enter the center if derived by cesarean section. Pigs that leave the building cannot return. Workers, students and visitors must shower before entering the animal and support areas. These measures are consistent with a “Specific Pathogen Free” (SPF) facility and are imposed as a means to prevent specific diseases and parasites from entering the herd. Animals provide research and teaching support without the complicating presence of diseases. Specific diseases and parasites that this policy is designed to prevent include porcine atrophic rhinitis (AR or PAR), mycoplasma hyopneumoniae (M-Hyo), swine dysentery (SD), lice, mange, and internal parasites. This policy has allowed SRTC to maintain a naive herd (no antibodies) for common swine diseases that include porcine reproductive and respiratory syndrome (PRRS), transmissible gastroenteritis (TGE), brucellosis, and pseudorabies (PRV).

**Negative or Low Titers** **Naive**

PPV \* PRRS

Lepto \* TGE

APP Brucellosis

M hyo PRV

SIV1

SIV3

Hps

*\*Serology will detect titers in vaccinated animals. Only animals retained for breeding purposes are vaccinated for these diseases.*

**Vaccination Protocols**

The only animals routinely vaccinated in the facility are animals retained in the breeding herd. At sexual maturity (6 mo) breeding stock are vaccinated with booster injections twice each year. Routine vaccines are used to prevent reproductive failure caused by diseases that cannot be excluded by the SPF procedures. A combination vaccine is routinely used to prevent the following diseases:

* Parvovirus
* Erysipelas
* 5-way Leptospirosis (L. canicola, L. grippotyphosa, L. hardjo, L. icterohaemorrhagiae, and L. pomona)

Other vaccines are provided upon request for animals scheduled to leave the SRTC. Modified-live vaccines are not allowed within the SRTC.

**Inspections**

The SRTC Standard Operational Procedures and animal research and teaching protocols are reviewed by the following oversight committees. Inspections are routinely conducted by the following committees and programs:

* UW Campus Institutional Animal Care and Use Committee (IACUC)
* U.S. Department of Agriculture (USDA)
* Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC)

**FACILITY DESCRIPTION**

**Education Wing (shower-in not required for entry into this area)**

* A conference room with seating capacity for 40 people provides space for classes, workshops or committee meetings.
* Standing room capacity can accommodate two bus-loads of visitors on a tour.
* Large windows allow visitors to view animals in selected rooms and to interact with SRTC staff in animal areas.
* Live video presentations of animal rooms can be projected into the conference room or to campus.

**Gestation Wing**

The gestation wing houses the breeding herd. Gilts enter from finishing rooms at ~6 months of age to enhance sexual development. Gilts and sows are bred by artificial insemination with semen collected from boars maintained within the center. Housing is provided for individual animals and pens for small groups of animals. Breeding pens are used for estrus detection and artificial insemination.

**Farrowing Wing**

Gestating sows enter these rooms 3 days prior to farrowing. Piglets typically nurse the sow for 18 to 24 days and then are weaned into the nursery rooms. Sows return to gestation for rebreeding. The farrowing wing has 4 rooms with 12 crates per room. Crates include a 7’x 2’ stall within a 9’ x 5’ pen that has a front creep area for piglets. An additional room (Intensive research) in this wing was designed to allow flexible use to meet a variety of research needs.

**Nursery Wing**

The nursery wing provides space for pigs from weaning until they are approximately 15 to 20 kg or 7 weeks of age. The nursery wing has 5 rooms with 24 pens per room. Each room includes 4 rows of 6 pens (3’ x 5’ ea). A sixth room provides flexible use to meet a variety of research needs.

**Finishing Wing**

From the nursery pigs are moved into finishing rooms for housing until market weight of 120 kg (~ 6 mo). The finishing wing has 5 rooms with 16 pens per room. Each room includes 2 rows of 8 pens (4.5’ x 10’ each). Floors in 3 rooms are partially slatted, 75% concrete slats and 25% solid concrete. Floors in 2 rooms have total slats to allow flexible pen arrangements. The finishing area also includes an adjacent building (Annex, not shown in figure) with two rooms each with 24 pens per room. Each room includes 2 rows of 12 pens (5’ x 11.5’ ea).

**Manure Handling and Ventilation Systems**

Innovative systems are used to remove manure and provide ventilation for animals. Animal manure is removed from the animal space by an under-floor flush system. Siphon tanks automatically flush several times per day to remove manure from shallow gutters beneath animal pens. Manure flows by gravity to exterior storage ponds. Manure from the exterior storage is applied to cropland as a source of fertilizer.

Animal areas are mechanically ventilated using a negative-pressure system. Minimum exhaust air is removed through PVC baffles located in the flush gutters and exterior walls. Air-inlet baffles distribute fresh air uniformly across animals within each room. Room temperature is controlled by thermostats that regulate unit heaters and exhaust fans.

The combination of manure removal and ventilation systems provides a sanitary environment with minimal odor which helps maintain animal health.

SRTC Staff

Jamie Reichert, B.S., Research and Operations manager

Jeff Booth, B.S., Assistant manager

Sam Trace, Breeding manager

Tom Crenshaw, Ph.D., Faculty supervisor and SRTC director

Additional support provided by research assistants and student workers from campus.

Figure 1. Room layout for the UW Swine Research and Teaching Center.

