UNIVERSITY OF TENNESSEE AT MARTIN

Swine Teaching and Research Farm

STANDARD OPERATING PROCEDURES

EFFECTIVE: 5-20-05
REVISED: 5-17-10

TABLE OF CONTENTS

The intent of this document is to describe the routine husbandry and standard operating procedures at University of Tennessee at Martin Teaching Farm Complex. This document is approved by the University of Tennessee at Martin Agricultural Animal Care and Use Committee. Any exemption must be submitted for approval to the Agricultural Animal Care and Use Committee. The rules and recommendations in this SOP follow those set forth by the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (referred to as Ag Guide).

1. Animal Care

    A. Observations of Animals
        i. Animals are observed and cared for daily, including weekends and holidays, by qualified personnel to assess their health and well-being.

    B. Emergency Care
        i. Emergency veterinary care is available at all times including after working hours and on weekends and holidays through the University veterinarian or local veterinarians.
        ii. Contact information for emergency assistance is posted at the entrance to the animal facility and in Headquarters.

    C. Animal Identification Methods
        i. Standard ear notching is used for identifying swine.

    D. Records and Documentation
        i. Individual records may be kept for sick, injured, or breeding animals.
        ii. Records will be kept in Dr. Clay Bailey's office, shepherd's office, and veterinary records will be kept of treatment and treatment protocols.

    E. Feeding Routine
        i. Animals are fed to meet current National Research Council recommendations for swine. Feed ingredients and finished feeds are stored and delivered to the animals in a manner that minimizes contamination or spoilage.
        ii. Water is available at all times and is checked daily for cleanliness.

    F. Social Environmental Enrichment
        i. Swine have visual and physical contact with one another and with animal care personnel.

2. Animal Health

    A. Quarantine Procedures
        i. Animals used for Swine Science Projects are assessed upon arrival. Rectal temperatures are taken and antibiotic injections may/may not be given (refer to supplemental SOPs on rectal temps and injections)
        ii. Health information available is evaluated to assess the need to vaccinate or treat incoming animals as required.

    D. Procedures resulting in potential stress or discomfort
        i. Castration, teeth clipping, and tail docking covered in supplemental SOPs

    E. Euthanasia and Disposal of Dead Animals
        i. Animals are euthanized by an overdose of barbiturates administered by a veterinarian.
        ii. Disposal of dead animals is covered in Implementation of Animal Welfare at UTM Teaching Farm.

    F. Pest and Predator Control
        i. Rodent and insect control is performed by farm personnel.
        ii. Predators are guarded against by the llama and guard dogs. Care of guard dogs fall under oversight of IACUC committee.

3. Facilities

    A. Housing
        i. Swine are housed in appropriate swine facilities.

    B. Space Requirements
        i. The housing exceeds recommendations set forth by the Ag Guide. Every animal should have sufficient space with access to feed and water and a dry resting site, and the opportunity to remain reasonably clean.

    C. Cleaning and Sanitation
        i. Barns, pens, stalls and other facilities should be maintained with cleanliness and order to prevent disease and promote a healthy environment.

D. Transportation
    i. Trailers should be of adequate space for swine hauled according to the Ag Guide. Trailers should be disinfected after hauling animals from an outside source.

4. References

A. Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (FASS, 1999)
B. Handbook of Livestock Management, Battaglia

5. Supplemental SOPs

Vaccination SOP

Nursery Pigs:

Rhinogen® BPE - at weaning and four weeks later, 1mL intramuscular.

Intramuscular injections - Given to swine of all ages; are given in the neck.

Subcutaneous injections - Given to swine of all ages; are given in loose skin behind shoulder, behind ear or loose skin around vulva.

Sow Management SOP

1. Farrowing
    a. Check udder for signs of milk
    b. Be watchful, if problems develop assist as necessary

2. Day 1 of Lactation
    a. Check udder for abnormal swelling or congestion
    b. Check vulva for abnormal discharge
    c. Weigh sow
    d. Process pigs (see Processing Day Old Pig SOP)
    e. Start sow back on feed at four pounds (feed three times a day)

3. Lactation Period
    a. Day 2 and 3 feed should gradually increase with each feeding. Total consumption on day 3 should approach 8 to 9 pounds
    b. Day 4 try feeding sows 4 pounds per feeding for a total of 12 pounds per day
    c. Day 14 if feed consumption is good increase feed uptake 3 pounds per day until sow reaches 18 to 20 pounds. Maintain this intake until weaning.
    d. Keep stress to a minimum. Be watchful for any changes in alertness, appetite, or general physical appearance.

4. Day 16 to 21 of Lactation
    a. Wean pigs
    b. Sale sows 7-14 days post-weaning

Birth to Sale SOP

1. Farrowing
    a. Day 0 - Birth
    b. Day 1 - (See Processing Day Old Pigs SOP)
        i. Weigh and record birth weight
        ii. Inject with 100mg iron dextran
        iii. Clip needle teeth
        iv. Ear notch
        v. Castrate males
        vi. Dock tails
        vii. Cross-foster as necessary
    c. Day 14 to 16
        i. Start creep feeding
        ii. Castrate any pigs that were too small at birth
    d. Day 16 to 21
        i. Wean pigs

2. Nursery
    a. Day 0 - Wean day
        i. Weigh and record weaning weight
        ii. Assign pigs to nursery pen and research treatments
        iii. Vaccinate pigs with Rhinogen® BPE
        iv. Start pigs of 1 of 3 mini pelleted diets

1. Phase 1 - Pigs weighing less than 10 pounds
2. Phase 2 - Pigs weighing 10 to 12 pounds
3. Phase 3 - Pigs weighing over 12 pounds

v. Check feeder adjustments and feed flow daily
vi. Check water height and flow daily
vii. Minimize stress and be watchful for changes in alertness, appetite, and physical appearance

b. Day 4 or 5
i. Start pigs weighing over 14 pounds on Nursery 1 diet

c. Day 21 to 28
i. Switch pigs weighing over 20 pounds to Nursery 2 diet
ii. Administer second vaccination of Rhinogen® BPE

d. Day 28 to 35
i. Switch pigs weighing over 40 pounds to grower 1 diet

e. e. Day 45-50 pigs to be sold

Processing Baby Pigs SOP

Purpose:

Processing is used to effectively provide piglets with proper identification by ear notching, castration, iron injections, tail docking, and maintain a healthy navel cord. Processing at The Martin Experiment Station is done when piglets are 1 day old.

Equipment needed:

Scalpel (with multiple blades for multiple litters)
Syringe (with multiple needles)
Injectable iron solution (1cc per piglet)
Clippers (for teeth and naval cord)
Iodine solution (for navel and castration)
Ear notching tool
Shallow container with 2% Chlorhexidine Solution (for clippers, notchers, and scalpel)
Scale and data sheet
Cauterizing scissors (for tail docking)
Piglet weighing pan
Bucket for tails, testicles, and any dead piglets

Procedure for Processing:

1. Plug in scales and cauterizing scissors
2. Ensure units measured reads lbs
3. Place weighing pan on the scales and push tare. Scales should read about 0.00
4. Remove all pigs in the litter to be processed and place in piglet crate behind sow
5. Fill out pig processing sheet (Appendix C). Make sure the litter number assigned is alive and mummies are accurately reported. Pigs killed, pigs weaned and date weaned should be left blank until weaning.
6. At this time all dead piglets should be weighed and thrown in the bucket. Make sure to notate that these pigs were born dead on the sheet next to their ID under the cause of death column.
7. Select the first pig to be processed.
8. Place pig in the pan located on the scales and record the weight and sex.
9. Restrain the piglet by grabbing the back of its head at the neck with one hand (the left assuming you are right-handed) and putting your index finger in the back crease of its mouth (See PIH-114 figure 3a of Appendix B).
10. Processing can be done in any series according to personal preference, but it is best to weigh first and then ear notch so that you don't mix up numbers (especially if you are working with someone else). Ear notching is done for identification of an individual pig. Each pig has 2 numbers, a litter number and a pig number. The litter number is notched in the animal's right ear (the right ear if you were standing behind the pig and its tail as closest to you). The litter number is the same for every piglet born to the same sow. The pig number that is notched in the pig's left ear is its individual number within the litter. See PIH-114 page 5 (Appendix B), diagram A for placement of numbers. This is to be done with an ear notching tool and the notches should be a quarter inch apart making sure to keep them from running into one another. The 27 notch area of the ear will sometimes have to be uncurled to make it deep enough to be readable (See PIH-114 pg. 5 Appendix B). Also, the 81 notch made in the tip of the ear can be tricky if you can also have a 9 because if not

slanted right (to the right), you can take the end of the ear off. Be careful, because once notches are made they are permanent!

11. Clipping needle teeth should be done to protect the sow's udder and other piglets from infection as a result of biting. These teeth are the 8 teeth (4 sets of two) located on the top and bottom jaws of the front sides of the mouth. Use the clippers to cut these teeth making sure not to cut all the way to the gum or cut the tongue. Cutting too short may cause an abscess (See PIH-114 pg. 3 Appendix B).
12. Iron injections should be given to prevent anemia that rapidly develops in newborns. The injection should be given in the neck muscle (See PIH-114 figure 3g Appendix B) and should be 1cc per pig. Needles should be changed between litters to minimize trauma to the neck which can result from dull or overused needles.
13. Castration should be performed on males that weigh 2 or more pounds. Hold the pig by the 2 back legs with one hand (your left if you are right-handed). Take your other hand and starting at the middle of the belly press going upward toward the tail end of the pig. Once you can see the testicles keep pressure there with your thumb that is holding the legs. With your other hand take the scalpel and using gentle pressure make 2 slits that are slightly shorter than the testicle in length. Additional cutting may have to be done to remove a clear film around the testicle so that it will easily pop out when pressure is applied. Squeeze the testicles out of the slits that you have made, and one at a time pull them down the back in the direction of the head. Make sure to get all of the testicle and the white tubules called vas deferens because leaving part of one of them could cause improper healing. If only one testicle is found or piglet is not castrated due to, small weight or small size of testicles, leave the tail intact. Change scalpel blades as needed. Dull blades increase healing time and could create a hazard to the pig and processor due to the extra pressure required to make the incisions. Don't forget to spray the open wound with iodine.

14. Trim the naval cord to 1-2 inches by using the clippers that you used for cutting needle teeth. After cutting spray with iodine to decrease the chance of infection.
15. Docking of the tail is done to prevent infections from other pigs chewing on the tail. The tail should be cut using cauterizing scissors to about 1 inch long. This should be done fairly slowly to allow for the iron to burn off the tip as it cuts. Only dock the tail if the piglet has been castrated.
16. Return the piglet to its proper crate.
17. Repeat steps 7 through 16 until all pigs have been processed.
18. After litter is processed make any special notes concerning litter in the comments section of data sheet. Place sheet in plastic protective cover and hang from hook behind sow crate.
19. Refer to steps 1 through 6 when changing litters
20. Once all litters have been processed remove processing cart and bucket from room.
21. Take bucket to incinerator and pour contents inside. Set the timer for 2 hours. Wash the bucket and return to farrowing house.
22. Clean processing cart and instruments.