





## **D. OUTLINE FOR BREEDING AND PERFORMANCE TEST**

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## **E. CAPRINE RESEARCH UNIT SOP ASSESSMENT TEST**

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### **OVERVIEW**

The College of Agriculture, Environment, and Nutrition Sciences (CAENS) and the George Washington Carver Agricultural Experiment Station (GWCAES) recognized that the Tuskegee University Caprine Research and Education Unit (TUCREU) needs a standard operating procedure (SOP) to promote human treatment of animals and the proper care of the animals used in agricultural research and teaching according to the Institutional Animal Care and Use Committee Guidebook (ARENA/OLAW, 2002), the Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS, 2002); to conduct the highest standard of goat research, outreach and education, as it relates to the Unit.

Therefore, this document was written to ensure high standard and quality within our research programs, providing standardized guidelines for management, research, outreach, and teaching activities at the TUCREU. The SOP defines the basic high standards for

national as well as international level. This SOP will be reviewed and updated as warranted.

### **PURPOSE**

is to

TUCREU. This SOP is designed for the successful conduct of research at TUCREU.



3. Researchers must complete the Equipment Need form; priority will be
4. All equipment purchased for TUCREU by the GWCAES will be housed at the Unit and cannot be removed from the Unit without prior permission from the Unit manager or DSRRP.
5. Researchers needing to house specialized equipment not provided by the unit may do so upon informing Unit manager (necessary for space management and security).
6. Researchers should inform the Unit manager about equipment and facility repair needed immediately.
7. Researchers must inform Unit manager to dispose of unused material.
8. All TUCRU equipment and supplies not reserved for use can be used for research projects upon informing the Unit manager.

#### **D- Facility Use**

1. The Director and Unit manager must be informed in advance of all research, teaching and outreach activities to be conducted at the Unit.
2. Indoor facilities are limited and priority of research will be given to

3. The Director will inform the researchers in writing to remove samples stored for more than 12 months. After three attempts, they will be removed by Unit manager and dispose of properly.

#### **F. Bio-Security Measures**

Bio-security measures are necessary to protect animals and persons working with animals from harm.

1. Protective measures for persons while working with animals include:
  - a. Protective attire (proper work clothes (uniform), lab coats, coveralls, boots, gloves, masks, etc) should be worn at all times when working with animals.
  - b. Work clothes should be washed and can be housed in assigned

strict measures (outlined below) should be taken to prevent bringing harmful microorganisms to the Unit. The use of sheep for research or for teaching purpose at the TUCREU shall follow the similar guidelines.

**SCOPE:** Researcher(s) are responsible to follow these procedures:

## **PROCEDURES**

**A.** Goats coming to the Caprine Research Unit from an outside source should have a certificate showing the last physical examination (deworming, vaccinations, any other health problems, etc.) from the producer (whether done by a veterinarian or the producer himself/herself) and must be accompanied by a health certificate from a certified veterinarian. This certificate may also be obtained from the TUCREU attending veterinarian upon examination of the animal(s) while under quarantine. Alabama Department of Agriculture and Industries Administrative Code 80-3-6-.18 now also requires all goats and sheep to be identified with official Scrapie ID prior to change of ownership or transport to fairs, exhibitions or across state lines.

**B.** Goats should be free from diseases and other illnesses before use at the research site. There should be no obvious signs of any health problems.

**C**



1. Body temperature,
2. Body condition score,
3. Eye color,
4. Physical deformities,
5. Deworming if necessary,
6. Vaccinations if necessary, and

for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, which is available at the TUCREU office. Equipment should be used to move non-ambulatory animals within the Unit to prevent undue suffering.

4. All persons attending sick animals must wear boots or clothing, including appropriate safety gloves.

5. The unit attending veterinarian should be contacted for appropriate treatment plans for the sick animals.

6. Do not use sick animal cages or pens as thoroughfares and notify the TUCREU manager IMMEDIATELY to ensure that proper cleaning procedures are performed.

7. Do not transport a sick or injured animal where undue suffering will result or when parturition is imminent. Goats considered suffering severe distress or injury should be euthanized on site and under no circumstances should be transported to livestock auction markets or over long distances to meat packers.

8. When possible, all dead animals should undergo a postmortem examination by a qualified veterinary pathologist.

9. Disinfect the pens or cages following the removal of the sick animals.

- b. The TUCREU manager, DSRRP, Attending Veterinarian or the Director of the Comparative Medicine Resource Center should be IMMEDIATELY notified. Emergencies cannot wait until the start of the next business day, including overnights and weekends.
- c. Inform the principal researcher(s) or collaborators by phone. Phone numbers, including office and emergency contact information should be posted within the unit.
- d. The list of the telephone numbers for the TUCREU manager, DSRRP, TUCREU attending veterinarian, Tuskegee University Attending Veterinarian, and the Director of the Comparative Medicine Resource Center must be clearly accessible within the unit.
- e. Dead goats, placentas and aborted fetuses, offal, etc., must be removed immediately and disposed of according to appropriate regulations set by TUACUC or the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching.

## **2. Fire Emergency**

- a. In case of fire, contact the local fire service **OR CALL 911**.
- b. A list of telephone numbers of local, state and federal groups that could provide assistance should be easily accessible.
- c. In case of extended power outage, on duty personnel should relocate samples stored in refrigerators to a secure area. Dead carcasses should be emptied from the freezer(s) and properly disposed of immediately.

## **3. Other Emergencies**

- a. Other emergencies may include hurricanes, tornadoes, earthquakes, and unavoidable facility problems such as temperature or humidity extremes etc. The following persons should also be notified immediately: Researchers, Unit manager, DSRRP or the

Attending Veterinarian or the Director of the Comparative Medicine Resource Center. **Call 911 if appropriate.**

b. Assess the prevailing conditions and decide whether to evacuate

should be regularly instructed as to the location of the safe area.

#### **SECTION IV: STANDARD OPERATING PROCEDURES FOR THE FORAGE PROGRAM**

**PURPOSE:** To maintain high quality forage and proper herd health at the TUCREU. Carrying capacity of the Unit and number of animals that will meet the research, teaching, and outreach needs of faculty, staff and students at Tuskegee University will be considered.

**SCOPE:** All goat-pasture related researcher(s) and the goat Unit manager are responsible for following these procedures.

#### **PROCEDURES**

Space availability must be considered when determining use of pastures and maximum carrying capacity of the pastures (See Appendix A). The TUCREU manager will oversee the maintenance of forage program and confer with specialists as needed to ensure that sufficient forage is available for scheduled research.

The following guidelines will be followed:

- A. Total animals to be carried on the farm pastures are not to exceed 150.
- B. Total animal numbers maybe adjusted according to pasture carrying capacity.
- C. All fields must be soil tested in the fall and lime applied according to soil test recommendations.
- D. In spring, half of the fertilizer recommended will be applied and remainder by early July.
- E. When forage exceeds the consumption of the animals at the Unit, it will be cut and baled.



## **SECTION VI. SPECIAL REQUIREMENTS**

### **A. Sheep Research**

**Sheep and goats have often similar care and management needs but since they are different species they have several physiological differences between them. Their foraging behaviors are very different. Goats are considered browsers while sheep are termed as grazers. Similarly, their response to fencing is different. Goats are very agile and curious animals so they are very difficult to contain. While many diseases and parasites are common to both sheep and goats, there are some important differences between the two species. Therefore, they should be kept separately during the quarantine phase as well as while using for research and teaching purposes. The distance between the two species should be based on the recommendation of the Animal Care and Use Committee.**

### **B. Co-grazing Research**

**Some research projects require that beef cattle and goats be grazed together. This work must be done for the minimum amounts of time necessary to accomplish the research objectives. The livestock species that are used for the projects should be subjected to the standard quarantine procedures if they are purchased from outside. The cattle quarantine procedures should be followed according to the Animal Care and Use Committee guidelines. Cattle that are used for co-grazing research should have calm dispositions and be adapted to the frequent contacts with animal care takers and research personnel. The grazing plots should have adequate provision of shades for both species to minimize stresses from extreme heat and cold. Fresh water must be made available at all times and water space must be adequate to allow for sufficient room for all animals to access and benefit from available water.**

### **C.**



**APPENDIX B**

**VISITOR G**



## **STANDARD OPERATING PROCEDURES GOVERNING MANAGEMENT OF SEED HERD**

Pre-determined number of goats of specific breeding will be maintained at the TUCREU as a seed herd. Present seed herd consists of 10 purebred Boer doelings, 8 purebred Kiko doelings, 2 purebred bucks one of each breed and two companion wethers. Seed herd is maintained on six paddocks with no cross contamination with commercial herd and serves for breeding purposes only. No invasive research will be conducted with seed herd except for those designed for management practices. Following applies to seed herd:

Seed herd will be bred and used for breeding purposes and for increasing the herd number. Purebred animals will be maintained at the Unit at all times.

Pre-determined cross breeding will be practiced on seed herd to produce composite breed for future purposes.

Seed herd will be kept separately from rest of the commercial herd at all times.

Animals purchased for seed herd will be quarantined in separate areas than those used for commercial herd.

Commercial herd will be used for research and purebreds will be used for research if available. If seed herd animal is used for research with commercial herd it will be considered commercial herd and will not return to the seed herd.

Seed herd will not graze areas that have been predisposed to commercial herd.

### **Health Monitoring**

Seed herd will be monitored for parasite control by checking fecal egg counts and FAMACHA eye color chart system every 3-4 months or as needed.

Seed herd will be maintained with proper vaccinations at all times.

Pasture rotation will be practiced to maintain proper forage quality and animal performance. Extra forage will be bailed as hay.

### **Performance Monitoring**

Performance of seed herd will be monitored every 4 weeks.

Animals should be weighed every 4 weeks.

Average daily gain should be monitored.

Feed intake should be monitored if possible.

Amount of grain or hay fed per group should be recorded.

Duration of time that animals were exposed to buck should be monitored.  
Pregnancy rates should be recorded.

Weaning weight should be recorded.  
Number of kids weaned per doe should be recorded.  
Average daily gain for kids should be recorded.

### **Kid Health Monitor**

Kids should be weighed at birth.  
Kids should be vaccinated with proper vaccines as recommended by veterinarian.  
Dehorn at less than 1 month of age for ease of the procedure and effectiveness of removing all of the horn bud (AG Guide, 2010). Cautery with heat should be the method of choice when possible, although surgery, freezing, and an acidic paste are other options)  
Castrate if needed when kids are between 24 h and 7 d of age. This is a common recommendation. Detailed descriptions of castration procedures are available in various publications (ASIA, 2002; Greiner and Wahlberg, 2003; Faerber, 2004)  
Make sure the doe accepts her kid (s) for nursing.  
Be prepared to feed colostrums if needed. You may purchase ready colostrums for orphan kids. Or you may milk the doe for first 3 days and feed it to kids.  
Have some kid bottles ready if needed.

PLEASE READ

FOR FURTHER INFORMATION

## **APENDIX D**

### **OUTLINE FOR BREEDING AND PERFORMANCE TEST**

- I. Inventory
  - A. Add does and bucks to inventory and ID the does leaving the herd and reason for disposal

- ii. Repeat of kidding and weaning
- C. Selection decisions
  - i. Select bucks by comparing the breeding values for each trait for sire and yearling
  - ii. Cull doelings that are structurally unsound and too extreme in frame (large or small)
- VI. Contribution to commercial herds
  - A. Record input
    - i. Production costs for weaned kids
    - ii. Carcass weight, selection grade
    - iii. Measures of tenderness and palatability
  - B. Record output
    - i. Breakdown prices for weaned kids
    - ii. Expected progeny difference for carcass weight
    - iii. Expected progeny difference for quality measurements
  - C. Selection decisions
    - i. Select bucks that progeny excel in low breakdown price
    - ii. Select bucks whose progeny excel in optimum carcass weights and quality

#### **KIDDING EASE SCORES**

1. No difficulty, no assistance
2. Minor difficulty, some assistance
3. Major difficulty, usually mechanical assistance
4. Caesarean section or other surgery
5. Abnormal presentation

#### **ADJUSTED WEANING WEIGHT**

$$\text{Adjusted 108 day wt. lbs.} = \frac{\text{Actual Weaning Wt.} - \text{Birth weight} \times 108}{\text{Age in days}} + \text{Birth Wt.} + \text{Age of doe adjustments}$$



**CAPRINE RESEARCH AND EDUCATION UNIT SOP ASSESSMENT TEST**

- e. Security
- f. 911
- g. Inform the principal researcher(s) or collaborators
- h. All of the above.
- i. A and F only. Emergencies cannot wait until the start of the next business day, including overnights and weekends.

**TRUE/FASE**

- 7. \_\_\_\_\_ There is a specific set of guidelines for all visitors (non-personnel) to the TUCREU.
- 8. \_\_\_\_\_ Serious heal