



Title: Dog Husbandry

SOP Number: 050

Purpose: To establish proper dog room husbandry and maintenance procedures in order to ensure the highest quality care for the dogs to prevent the development of disease while promoting physical and psychological well-being.

PROCUREMENT:

- A. Dogs will be purchased or loaned from USDA inspected facilities, or reputable local animal rescue organizations.
- B. A copy of the health records for each dog will be requested from the dealer.
- C. A TTU employee will pick up the dogs and transport them to the Animal Facility in an environmentally controlled vehicle.

RECEIVING:

- A. Upon arrival, dogs may be treated for external parasites if needed.
- B. A TTU veterinarian will conduct a complete physical examination of each dog (within 1 week of arrival). This will include a current temperature, and length and weight of the dog, to ensure there are no obvious abnormalities. A physical exam form will be completed and kept in the protocol binder.
- C. Individual health records will be established for each dog and kept in the protocol binder or with the facilities manager. Records may also be maintained in a digital format.
- D. If the dogs do not have a record of vaccinations, they will be vaccinated with a 5-way canine vaccine and rabies upon arrival.
- E. A USDA Record of Acquisition will be filled out for each dog and kept on file.
- F. Each dog will have a photograph ID card to be mounted on the front of the kennel.
- G. At the end of the study, a USDA Record of Disposition of Dogs and Cats, will be completed and kept on file.
- H. Dogs acquired for the TTU Dog Colony will be spayed or neutered (see surgical techniques), vaccinated, tested for heartworms and any tick-borne illnesses, and treated for parasites.
 - a. Vaccines include DHPPC (Distemper, Hepatitis, Parvo, Parainfluenza, Corona) and Rabies. Other vaccines may be included as deemed necessary by the veterinarians.
 - b. ELISA test will be used to test for tick diseases and heartworm diseases. If positive for heartworms, the dog will be returned to the source. If positive for Ehrlichiosis or Anaplasmosis, the dog will be treated according to the veterinarians' recommendation. Dogs will be given monthly oral, q 6-month, or q 12-month injectable heartworm prevention.
 - c. A fecal flotation will be performed upon intake, within one week (if due/needed) or suspect of internal parasites. If found, dogs will be treated per parasite type at the vets' discretion.
 - d. External parasites will be treated with oral or topical treatments such as, but not limited to, Nexgard or Bravecto.

HOUSING AND CARE:

- A. Dogs may be housed in compatible pairs or individually in 8' x 4' (32 square feet) (NDF Dog colony) or 6' X 4' (24 square feet) (AFS) kennels.
 1. Dogs may be pair housed during daytime hours when supervised by staff then singly housed overnight.
 2. Dogs may be singly housed if:
 - a. Kennel and dog size do not allow for more than one dog based on space requirements [AWA: (length of dog in" from tip of nose to base of tail + 6) ²/144].
 - b. There are concerns regarding the well-being of the animals, such as incompatibility, as determined by the veterinarian or research staff
 - i. Incompatibility is based on lunging, growling, excessive pinning, one dog trying to escape, and attempted bites during walks and play.
 - c. Individual housing based on experimental needs is justified in the animal use protocol and approved by the IACUC.
 - d. The need for single housing should be reviewed on a regular basis by the IACUC and the veterinarian.
 - e. Single housing should not necessarily preclude other attempts of monitored social interaction with other dogs such as "parallel walks" and small play groups. These enrichment strategies should be prioritized if tolerated by the dog.
 - f. Human-animal interaction should be included for enrichment for single housed dogs.
- B. All forms located in the room's ACS notebook or digital records must be adequately filled out daily.
 1. Daily Observation Sheet
 2. Task sheets
 3. Temperature/humidity logs
 - a. Temperature range: 64-84 degrees
 - b. Humidity range: 30-70%
- C. Rooms are checked daily for any operational deficiencies. Any deficiencies are to be reported immediately to the facility manager.
- D. Water bowls are rinsed and re-filled daily with fresh water.
- E. Uneaten food is discarded, and fresh food is added in meals once or twice daily in bowls or feeders, a standard feeding regimen for dogs. If food remains untouched, the veterinarian is to be notified immediately.
- F. The dogs will be removed from their kennels daily and placed in an empty room, transport crate, outdoor kennel or play yard while the room is being cleaned. Feces and uneaten food are removed from the primary enclosure and the room is cleaned by hosing with hot water.
- G. Squeegee or mop the floor dry.
- H. All kennels, feed bowls/feeders, and water bowls are sanitized every two weeks.
- I. Check feed expiration date and clean feed barrel weekly. Discard expired food and replace with fresh food.
- J. Enrichment will be provided according to the enrichment portion of this SOP.

- K. Resting boards or elevated dog beds will be provided for comfort.
- L. Dogs may be hand walked to provide human interaction and exercise.
- M. Chew bones and toys may be offered.
- N. Animal care staff will trim the dog's toenails on an as needed basis.

CAGE/KENNEL SANITATION:

- A. Total cage sanitation should be done a minimum of every two weeks.
- B. Animals are completely removed from the room.
- C. The kennels are rinsed with hot water to remove any debris.
- D. The kennels and feed/water bowls are sanitized with a disinfectant solution and allowed to soak for 10 minutes.
- E. The cages are rinsed thoroughly with hot water and allowed to dry.

ANIMAL ROOM SANITATION:

- A. Animals are completely removed from the cleaning area.
- B. Weekly- All surfaces (including door frames, lights, and vents) are wiped down with disinfectant mixed according to manufacturer's recommendations.
- C. Weekly- Flush the floor drains with a 10% bleach solution to help minimize odor.
- D. Every two weeks- Floors, walls, and ceiling should be sanitized with disinfectant and allowed to soak for the appropriate contact time. The room is then thoroughly rinsed with hot water and allowed to dry.

ENRICHMENT:

- A. Social enrichment:
 - 1. Human interaction occurs during daily husbandry.
 - 2. Animal care staff may brush them providing stimulating interaction.
 - 3. Group play time with compatible dogs
 - 4. Parallel walks with compatible dogs
 - 5. Positive reinforcement-based training
 - 6. Play time with human caretaker
 - 7. Petting interactions between caretaker and dog
 - 8. Other enrichment approved by the IACUC or Veterinarians.

- B. Physical enrichment:
 - 1. Balls, bones, or various toys are provided to the dogs to help satisfy their need to play and reduce boredom.
 - 2. Raised, solid-surfaced resting boards are used to provide dogs comfort.
 - 3. Treats are given to the dogs daily after cage cleaning.
 - 4. Outdoor exploration time
 - 5. Dogs may be provided with a small shallow pool to play in and cool off in during summer months. This pool will not contain more than two feet of water. The pool will be emptied and sanitized after each day of use.
 - 6.
 - 7. Exercise
 - a. AWR space requirements for dogs is (length of dog in" from tip of nose to base of tail + 6)²/144

- b. Dogs must be provided exercise if housed in a space less than 2 times the space requirement.
- c. Dogs will be hand-walked providing exercise and positive human interaction unless otherwise justified in the experimental protocol.
- d. Dogs will be walked/allowed to play for a minimum of 15 minutes daily unless otherwise justified in the experimental protocol.
- e. Other enrichment approved by the IACUC or Veterinarians.

ENRICHMENT IMPLEMENTATION:

- A. The facilities manager will implement an enrichment schedule based on the study and the enrichment devices available.
- B. Enrichment will be provided to the dogs by the technicians at change-out and by approved students working on the project.
- C. Technicians/students will log any enrichment provided to the dogs in the enrichment log located in the room's notebook.
- D. Exceptions to the enrichment portion of this SOP require adequate justification in the protocol as to why environmental enrichment would interfere with the study and then must be approved by the IACUC.

SURGICAL TECHNIQUES

Anesthesia and Analgesia: Premedicate with Atropine 0.02-0.04 mg/kg SQ or IM and Buprenorphine 0.005-0.02 mg/kg IM or SC which provides analgesia for 6-12 hours. Place IV catheter and give Dexdormitor-Butorphenol-Ketamine in equal amounts per attached table IM. Different anesthesia, analgesics and pain meds may be used at the vets' discretion. Intubate and maintain on 1.5-3% Isoflurane. Maintain patient on IV fluids (0.9% NaCl or Normasol) during surgery. Post-op, extubate dog once they regain swallow reflex. Recover on heating pad until ambulatory.

Canine Orchiectomy

Surgical procedure: Position the patient in dorsal recumbency. Clip and aseptically prepare the the prescrotal area. Do not clip the scrotum. Drape the surgical area to exclude the scrotum from the field. Apply pressure to the scrotum to advance one testicle as far as possible into the prescrotal area. Incise skin and subcutaneous tissue along the median raphe over the displaced testicle. Continue the incision through the spermatic fascia to exteriorize the testicle. Maximally exteriorize the spermatic cord by reflecting fat and fascia from the parietal tunic with a gauze sponge. Place traction on the testicle while the fibrous attachment between the spermatic cord tunic and scrotum are torn. Place encircling ligature (2-0 or 3-0 absorbable suture) around the entire spermatic cord as well as transfixation ligature. An open castration technique may also be performed in which the tunics are removed. Place a Carmalt hemostat across the cord near the testicle. Transect both the ductus deferens and vascular cord between the hemostat and ligatures. Inspect the cord for hemorrhage and replace the cord within the incision. Advance the second testicle into the incision and remove testicle as described above. Appose the incised dense fascia on either side of the penis with interrupted or continuous sutures (2-0 or 3-0 absorbable sutures). Close subcutaneous tissues with a continuous pattern. Appose skin with an intradermal, subcuticular or simple interrupted suture pattern.

Canine Ovariohysterectomy

Position the patient in dorsal recumbency. Clip and aseptically prep the ventral abdomen from the xiphoid to the pubis. Make the incision just caudal to the umbilicus and make 4-8 cm incision through the skin and subcutaneous tissue to expose the linea alba. Grasp the linea alba, tent it outward, and make a stab incision into the abdominal cavity. Use Mayo scissors to extend the incision cranial and caudal. Slide the ovariotomy hook against the abdominal wall and turn medially to ensnare the uterine horn, broad ligament or round ligament and gently elevate it from the abdomen. With caudal and medial traction on the uterine horn, identify the suspensory ligament and stretch or break the ligament near the kidney to exteriorize the ovary. Make a hole in the broad ligament caudal to the ovarian pedicle. Place one Rochester Carmalt forcep across the ovarian pedicle proximal to the ovary and one across the proper ligament of the ovary. Place a figure 8 ligature proximal to the ovarian pedicle clamp using an absorbable suture material (2-0 or 3-0). Place a second circumferential ligature proximal to the first to control hemorrhage. Place a mosquito hemostat on the suspensory ligament near the ovary. Transect the ovarian pedicle between the Carmalt and the ovary. Remove the Carmalt from the ovarian pedicle and observe for hemorrhage. Find the 2nd ovary on the opposite side and repeat the process. Apply cranial traction on the uterus and ligate the uterine body cranial to the cervix. Place a figure 8 suture through the body and a circumferential ligature nearer the cervix. Place a Carmalt across the uterine body cranial to the ligatures. Grasp the uterine wall with forceps cranial to the ligatures. Transect the uterine body and observe for hemorrhage. Replace the uterine stump into the abdomen before releasing the hemostat or forceps. Close the abdominal wall in three layers (fascia/linea alba, subcutaneous tissue and skin).

ANIMAL HEALTH MONITORING:

- A. Animals are observed daily by animal care staff for any evidence of illness or change in behavior.
 - 1. Everyone with access to the animal facility is responsible for immediately informing the facility manager or university veterinarian when an animal becomes ill or a change in behavior is observed.
- B. In the event of suspected illness:
 - 1. Record your observations in the dog's individual treatment record- include the date, the problem observed, and your initials.
 - 2. Immediately contact the Attending or Clinical Veterinarian or the appropriate facility manager:

Dr. Tiffanie Brooks, ACS Attending Veterinarian
806-834-8588 Office
806-239-2120 Cell

Dr. Paul Stonum, ACS Clinical Veterinarian
806-834-7373 Office
660-562-4425 Cell

Sydnee Woodman, ACS Facilities Manager
806-834-2872 Office

602-758-0670 Cell

Nathan Hall, New Deal Facility

806-834-8924 Office

727-919-2243 Cell

3. Record any treatment regimens along with the outcome of the treatment in the appropriate health records.