

Elephant SSP/TAG Institutional Self Assessment For Assisted Reproduction



This document is intended to be used as a resource for institutions preparing for Assisted Reproduction (AI). The following questions are meant to help guide institutions to a successful AI and prepare for a birth.

- 1 Do we have a confirmed breeding recommendation?
- 2 Do we have a cycling cow with at least a year (3 cycles) confirmed via blood analysis?
- 3 Do we have institutional support to invest the money that is needed for a successful birth? Example, Vet Consultant and Elephant Manager Consultant if needed. Drugs if not successful.
- 4 Do we have Staff with the knowledge to manage parturition and calf re-introduction to the dam and herd members?
- 5 Have we talked to the staff about the possibility of a problematic birth?
- 6 Have we identified semen donors?
- 7 Have we contacted those institutions holding semen donors to set up semen donor agreements?
- 8 Is the animal intended for AI in good physical condition?
- 9 Who will do the AI?
- 10 Are we prepared to hold a bull if we have a male calf born? Or do we have an alternative plan?

Elephant SSP/TAG Artificial Insemination Information packet

The following information is for institutions that have asked for and received a breeding recommendation from the Elephant TAG and have answered the questions in the self-assessment to be institutionally satisfying.

Sequence of events

- Confirm breeding recommendations
- Identify semen donor(s)
- Condition animals
- Monitor cycles
- Gather supplies/equipment
- Identify and confirm principal participants
- Confirm cycle
- Schedule procedure
- Arrange for semen collection and transport
- Prepare site
- Assign roles
- Conduct procedure

Breeding recommendations

- Consult TAG recommendations for suggested bulls for collection.
- Confirm tentative availability of semen

Conditioning animals before AI

- All elephants should be conditioned to entering ERD and being restrained with leg straps.
- All elephants should be conditioned for blood collection.
- All elephants should be conditioned for anal palpation.
- All elephants should be trained to have feces evacuated from their rectum and to receive an enema.
- All AI candidates should be conditioned for vestibule palpation and hand insertion.
- All AI candidates should be conditioned for insertion of catheter into vestibule.
- All AI candidates should be conditioned to most of the equipment that will be used for the procedure, e.g. ultrasound transducer, transducer probe, 4-meter catheter for endoscope, two monitors, two rolling carts, and up to 6 or more people behind the cow, two of whom will be under the rear legs.
- Institutions trying to impregnate their females should try to maintain a lower body weight on the spectrum of normal for their elephant before conception and through parturition. (This can be done with exercise and a low calorie, high fiber diet.)

- Train the elephant to accept the presence of several people behind them sharing the same space. It is important that these people are not handlers they see everyday but other staff members.

Monitor hormone cycles

- Monitor cows' cycle.
- Identify fertility or other lab, with quick turnaround on lab results if you cannot run the blood in-house
- Pinpoint first and second LH peaks. (30 to 60 days of blood collection maybe need.)

Gather Supplies and Equipment

General

- Distilled water (~20gal per day)
- 3 large disinfecting/sterilizing containers, ex. large tubs with lids like Rubbermaid sells that fit under a bed.
- 3 containers of TL Heps for extender
- Nolvasan disinfectant
- Betadine surgi-prep sponges brushes
- Sterile drapes 4' x 8' for table
- Sterile gloves
- Sterile palpation sleeves
- Non-sterile sleeves
- Exam gloves
- Non-spermicidal gel
- Liquilube
- Enema hose
- 4-meter endoscope
- Sterile towels
- 10 bath towels
- Ultrasound machine
- Ultrasound gel
- Insemination tubes
- 4 cans of condensed air
- Duct tape
- 2 tables 4' x 8'
- 2 rolling carts
- AI stand for elephant's rear feet
- 2 short stools
- 3 - 100' extension cords
- 3 or more Equitainers
- 3 sets of surgical scrubs per day
- Fly spray

Surgical

- Suture thread and needles of proper gauge
- Syringes
- Needles
- Anesthesia
- Scalpel
- Antibiotics
- Gauze

Endocrine area

- Disinfectant endocrine area prior to AI.
- 2 - 4' x 8' tables
- Microscope
- 3 containers of TL Hepes
- Slides
- Slide covers
- Slide warmer
- Centrifuge
- Tubes
- Pipettes

Identify and Confirm Principal Participants

- AI technical team leader
- AI team
- Elephant manager
- Keeper team
- Other zoo management or staff
- PR department

Confirm hormone cycle

- Once animal is conditioned and all other staff and equipment/supplies are identified and available, confirm cycle and predict LH peaks.

Schedule procedure

- Confirm personnel availability
- Arrange transportation and accommodations for personnel, as needed

Arrange for semen collection and transport

- Confirm semen availability
- Arrange for collection and delivery of semen. (May need an airport TSA agent present for shipment. **Do not X-ray semen in Equitainer.**)

Prepare site

- Disinfect ERD and adjacent area prior to AI.

- Disinfect platforms.
- Confirm restraint straps and winches are in good shape.
- Confirm ERD is in good working condition.
- Provide fans if temperatures expected to be hot.
- Spray for flies.

Assign roles

AI technical team

- Help monitor cows cycle.
- Gather equipment needed for AI.
- Disinfect equipment prior to AI.
- Sedation of cow if needed.
- Hook up equipment needed ex. ultrasound machine and 8mm recorder, 4-meter catheterized endoscope to helmeted/carted monitor.
- Warm semen samples.
- Check motility/concentration of semen samples. Bind multiple samples. Extend if needed.
- Ultrasound cow's uterus and locate follicle attachment sight.
- One vet insert 4-meter endo-trachea catheter into vestibule, while the other vet monitors movement and location to the vaginal cervix's opening via ultrasound. Vet may need to check placement via endoscope and ultrasound.
- Once the catheter is in place, expand catheter sack.
- Reinsert catheterized endoscope via catheter into the cervix opening.
- Deposit semen.
- In some cases semen is offered to the cow after the AI.

Endocrinologist

- Warm semen samples.
- Check motility/concentration of semen samples. Bind multiple samples/extend if needed

Keepers

- 1 keeper will work the cow.
- 1 Keeper to rake-out and give enemas.
- 1 or two keepers helping the vets with the insertion of the catheter.
- 1 keeper keeps other stalled elephant(s) calm throughout the AI process.
- 1 keeper video taping.

Runners

- May need to make airport run for personnel or semen.
- Will keep the handler supplied with food reinforcements.
- Towels for vets