

## Decision Tree for Infertility in Red River Hog (An example for other ungulate species)

### Historical/Husbandry Information for Breeding Pair:

*-for the sire & dam of the breeding pair (i.e., their parents):*

- 1) Did they conceive regularly?
- 2) What was/is their rearing history?
- 3) Did either of them have any pathology in their reproductive tracts?

*-for the breeding pair in question:*

#### A) Husbandry Issues:

- 1) Diet; changes in diet?
- 2) Substrate?
- 3) Hours on exhibit?
- 4) Photoperiod (i.e., geographical location of zoo)?
- 5) Enclosure size; barn size?
- 6) Immobilizations per year per animal?
- 7) Enrichment?
- 8) Number of hours of interaction with keepers?
- 9) Mixed species exhibit?
- 10) Proximity of exhibit to predator exhibits?
- 11) Are pigs housed together continuously throughout the day?
- 12) If there is more than one female in the group, does each female have equal access to the male?

#### B) Reproductive history of pair:

- 1) What was their age at first reproduction?
- 2) Were first copulation attempts successful (i.e., litter produced)?
- 3) What is their contraception history?
- 4) How long have the hogs been together?
- 5) Genetic value of the pair?
- 6) Is either member of the pair a proven breeder?
- 7) What is the rearing history for either member of the pair?
- 8) Health history of the pair?

### **Possible Tests and Procedures to Perform on Potentially Infertile Males**

- Physical Exam/Rectal Exam
- Semen Analysis
- GnRH challenge
- Testes ultrasound
- Accessory sex gland ultrasound
- Serum Testosterone/FSH/LH
- Thyroid Panel
- BSE
- CBC/Chem/Disease Screen
- ACTH challenge
- Mineral Screen
- Seminal Fluid Culture
- Fecal
- Urine analysis
- (Testicular Biopsy)

### **Possible Tests and Procedures to Perform on Potentially Infertile Females**

- Physical Exam/Rectal Exam
- GnRH challenge
- Serum E2/P4/FSH/LH
- Thyroid Panel
- CBC/Chem/Disease Screen
- ACTH challenge
- Mineral Screen
- Fecal
- Urine analysis
- Uterine lavage for culture
- Transrectal ovarian ultrasound
- Laparoscopy-exam oviducts
- Uterine culture/swab
- Endometrial biopsy (at estrus only because of cervical rings)

### **Treatment/Reversal for Infertility in Females Based on Diagnostic Factors**

- Failure to Cycle (ovulate): management intervention (husbandry/pheromones/weight loss), hormonal therapy, treatment of disease (pyometra)
- Failure to Fertilize/Conceive: AI, IVP, unplug blocked ducts, antibiotic therapy
- Embryo Death/Failure to Implant: synthetic progestagens, pentoxiphyllene, decrease stress, decrease feed intake, uterine quieting (give single treatment of deslorelin)
- Fetal Death/Abortion: vaccination, synthetic progestagens, management/husbandry

