



EQUINE EMBRYO TRANSFER PROGRAM



The Veterinary Medical Teaching Hospital at Kansas State University offers an equine embryo transfer program. There are several ways in which mare owners can participate in this program. What follows is an overview of these options. For additional information and pricing, please contact:

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Management of the donor mare:

The donor mare is brought to the VMTH-KSU prior to breeding for an initial reproductive examination. On initial presentation, a transrectal ultrasound, vaginal exam and uterine culture are performed to identify any pathologies that may need to be treated prior to breeding to maximize chances of recovering a viable embryo. Once it has been determined that the donor mare is reproductively sound and ready for breeding, her estrous cycle is closely monitored. The donor mare is artificially inseminated or mated to a stallion of your choice. Special attention is paid to post-breeding management and detection of the day of ovulation. Donor mares are monitored ultrasonographically 1 to 4 times daily to determine the exact moment of ovulation. The flushing is performed 6.5 to 8 d after ovulation. The frequency of examinations, and day and time of flushing depends on whether the embryos will be recovered for fresh transfer, transportation to a centralized center or cryopreservation. The recovered embryo is transferred fresh into a synchronized recipient mare, shipped to a centralized center for transfer, or cryopreserved (frozen) for deferred transfer.

Alternatively, the initial examination and breeding management of the donor mare can be performed at another facility and the donor mare can be presented to the VMTH-KSU for embryo recovery only. Expertise managing the donor mare, and communication between all parties involved is critical for success of this program. Since embryo cryopreservation requires a more intensive breeding management of the donor mare for success, **only donor mares managed and inseminated at the VMTH-KSU are accepted for embryo cryopreservation.**

Management of the recipient mares:

The VMTH-KSU does not provide recipient mares. Two options for recipient mares are available:

Recipient mares are provided by the donor mare owner. At least two recipient mares should be available per each donor. Mares should be of proven fertility with no history of reproductive problems or maiden, 3 to 10 years old. The recipients are brought to the VMTH-KSU at the same time as the donor mare for an initial reproductive examination that includes ultrasound, vaginal exam and uterine culture. The recipient and donor estrous cycles are synchronized prior to breeding the donor so that they ovulate within 1-2 days of each other. The recipient mare that ovulates closest to the donor and that has the best uterine condition is chosen for transfer. The embryo is transferred non-surgically and the recipient is examined for pregnancy the week after

the transfer. Alternatively, the initial examination and synchronization of the recipient mares can be performed at another facility and the recipient mares can be presented to the VMTH-KSU with the donor mare for embryo transfer only.

The embryo is shipped to a facility with a commercial recipient herd: The embryo is shipped FedEx overnight to a facility with a commercial recipient herd, where the actual transfer of the embryo takes place. The recipient herd facility must be contacted prior to breeding the donor mare. The VMTH-KSU maintains contact with the recipient facility to update them on the progression of the donor mare's estrous cycle and ovulation date.

Expected results

The average embryo recovery rate is approximately 60%. These numbers are highly variable depending on the fertility of the particular mare and stallion. Young fertile mares bred to a fertile stallion can provide an embryo recovery rate of 80% while about 30% embryos are recovered typically from older subfertile mares. Pregnancy rates following transfer vary from 60% to 80% and are similar for shipped or fresh embryos. Pregnancy rates vary with age and fertility of the donor mare, the uterine condition of the donor mare and the quality of the embryo, among other factors. With cryopreserved embryos, approximately 10% lower pregnancy rates can be expected. These estimations apply only to donor and recipient mares managed entirely at the VMTH-KSU.

