

EMBRYO FLUSH & TRANSFER

Embryo transfer (ET) is the process of flushing an embryo from a mare (donor) and placing it into the uterus of a second mare (recipient) to be carried for the remainder of the pregnancy. The genetic makeup of the resulting foal will be that of the donor mare and stallion, the recipient is merely a “surrogate mother”. Embryo transfer has been widely accepted by most breed registries in most countries. ET may benefit your breeding program if: your mare has fertility problems which decrease her ability to carry a pregnancy; the mare is a performance horse with a busy show or race schedule; you want to obtain a foal from a 2 year old filly; or you want to increase the number of foals produced from a valuable mare.

The process starts when we synchronize the donor mare with 2 or 3 recipients’ cycles. This is done by monitoring the mares estrus cycle via veterinarian ultrasound and administering various drugs such as Regumate®, hCG, and prostaglandin, to control the timing of ovulation. It is crucial that the recipient mare ovulate within either 1 day before or 2 days after the donor mare ovulates. The donor mare is inseminated and she is monitored for ovulation. The donor mares ovulation date is considered day 0, with the flush to be performed on day 6, 7 or 8.

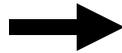
On the day of the donor mare’s flush she will once again be examined via ultrasound to confirm the number of ovulation’s that occurred and the condition of her uterus. The mare’s vulva is washed and vagina is lavaged with a saline solution to minimize any contamination to her uterus. A catheter with a balloon is than placed through her cervix and the balloon inflated so that it forms a snug seal at the cervix to prevent leakage of any flush solution into the vagina. Then a warmed enriched flush solution is infused via gravity flow into the uterus, the typical mare’s uterus holding 1-2 liters when full. The solution is then drained from her uterus into a filter cup, which will catch any embryos present. This procedure is repeated for up to 4 flushes. When the flush is finished the donor mare will receive a uterine lavage of saline to remove any remaining flush media

and a shot of prostaglandin. Microscopic examination of the contents of the filter will reveal if there is an embryo present.

If an embryo is found, its appearance is evaluated to ensure that it is healthy and then it is washed through a series of rinses to remove any contaminants. The embryo is then loaded into an insemination pipette to be transferred to the recipient. If a recipient is not available at this location the embryo can be packaged for shipment to another location for transfer. While the embryo is being prepared the recipient mare is ultrasounded to confirm that she has also ovulated and to evaluate the condition of her uterus. Her vulva is then washed and the insemination pipette containing the embryo will be directed through her cervix and the embryo placed into the uterus. This recipient will be kept in a low stress environment with limited exercise and placed on 3 days of Banamine; 5 days of antibiotics and daily Regumate® (progesterone supplement) until confirmation of pregnancy. Upon ultrasonic examination on day 15 or 16, if a pregnancy is determined the recipient will then remain on Regumate and stall rest until confirmation of a heartbeat at day 24 and a final check at day 50. At this time the recipient is allowed to return to the embryo owners or be placed in a broodmare pasture for the remainder of the pregnancy. We highly recommend that the recipient remain on Regumate until day 120 of her pregnancy, then with confirmation of an adequate progesterone serum level, she can be slowly weaned off.

Owners may chose to provide their own recipient or lease or purchase one. Recipient mares used at CLVH must pass a reproductive soundness exam, which includes an ultrasound examination, a uterine biopsy and a culture with cytology. The ideal recipient would be between the age of 3-8 years of age, has had a foal in the past without any complications, and be in good general health. The candidates should also have a good disposition, be able to lead, load into a trailer and tolerate living in a stall. We also try to match the size of recipient with the size of the donor.

Embryo transfer can be an exciting addition to your farms reproductive plan when all the facts and costs involved have been carefully considered. Remember to check with your breed registry for the current rules on registering foals resulting from ET and the forms that may need to be filled out in advance or fees for application. Also, consider the chances of success will be different from mare to mare considering the circumstance for trying the flush, the type of semen used and the stallion chosen. The value of the foal should outweigh the cost involved with the flush, transfer and upkeep of the recipient. So what are the statistics? Well, when using healthy donor and recipient mares with cooled shipped semen there is a 70-80% chance of recovering an embryo from the donor and another 60-70% chance that it will result in a pregnancy in the recipient. Thus, just over a 50% chance of retrieving an embryo per attempt per cycle that results in a pregnancy.



If you would like more information and would like to speak with any of our reproductive specialists or would like to schedule an appointment, please feel free to contact our new facility at (952) 435 - 8387.