

STALLION, MARE AND MANAGEMENT INFLUENCES ON PREGNANCY RATES

Kevin D. Dippert, PhD, PAS
Director, Equine Reproduction Concepts, LLC

(Original Print-2002)

An interesting finding at our facility this past year illustrates how the stallion, the mare and reproductive management all influence the ability to obtain pregnancies. Using our embryo transfer (ET) program as a model, we found quite a disparity in embryo recovery rates relative to the reproductive soundness of the mare, the semen quality from the stallion and the ability of the horse owner and veterinarian to manage the breeding. In order to obtain embryos, recipients at ERC were bred with good quality, fresh or cooled semen. Remarkably, 13 embryo recovery attempts yielded 12 embryos, a 92.3% embryo recovery rate. In comparison, those client mares reproductively managed at our facility

resulted in a 60.9% (14/23) recovery rate. To understand the difference in success among these two groups, one must evaluate the reproductive condition of the mares and the semen quality used for insemination. Presumably, since both groups of mares were managed by the same facility management practices did not play

a role. We must remember that recipients are examined and accepted based on their reproductive soundness and age (3-9 yrs-old). On the other hand, the client mares that were managed at ERC, ranged in age from 6 to 21 (72% at least 15 yrs-old). Some already had a history of uterine problems before coming to ERC. In addition, it has been well documented that there is an increased incidence of early embryonic death in older mares. Therefore,

one could assume that the difference in reproductive condition between client mares and recipients did play a role in the success or failure of embryo recovery attempts. To a lesser extent, another factor that may have had an influence on recovery rates was semen quality. At no time was a recipient mare bred with semen considered less than adequate. All inseminations occurred with fresh or cooled semen that was at least 30% progressively motile (average range: 40-70% pms). Although we were generally pleased with the semen quality used for client mares, there were a few instances when less than ideal semen (<30% pms) was used. Also, only cooled and frozen semen were utilized with our client mares.



Isis (far right, 21 yr old, Thoroughbred) is standing beside 4 recipients that are carrying her 2001 embryos.

There was a population of mares in our ET program that were bred elsewhere and only came to ERC for embryo recovery procedures. In 12 embryo recovery attempts, 5 embryos were obtained from these mares, yielding a success rate of 41.7%. Although the

number of recovery attempts may be too few in number to compare amongst groups, the trend is similar to what we've seen at ERC for years. Embryo recovery rates are characteristically lower when mares are managed elsewhere. We point this out not to condemn the work of others or promote our own, but to realize that through certain circumstances some seemingly important management practices are not being exercised.

Everyone can sympathize with the overworked veterinarian that is too busy to take into account every management tool. But it's when laziness of a horse breeder or veterinarian creeps in that sympathy goes out the door. In our opinion, best efforts should be made to appropriately assess timing of ovulation relative to insemination, semen quality and quantity at the time of insemination and fluid retention in the uterus after ovulation.

Lastly, an embryo recovery rate of 28.6% (6/21) was seen in those mares where all reproductive management and embryo recovery

attempts were performed elsewhere. ERC was just on the receiving end, with recipients anxiously awaiting in case they did recover an embryo. Our assessment of this finding is simply that in addition to broodmare management there is a learning curve to recovering embryos. Embryo recovery and identification are skills that take some time to perfect. In 2001, ERC began offering 1-day minicourses on embryo recovery so veterinarians can obtain a firm understanding of what is necessary to be successful with these procedures.