

Cooled Semen Transport & Breeding

By Bayer Equine Connection

Advancements in Equine Artificial Insemination

Today's breeding technology provides horse owners more options than were available in the past. Artificial insemination and semen preservation techniques make it possible to ship stallion semen to mares nearly anywhere in the country. But success with transported semen will depend on the careful reproductive management of both stallion and mare.

WHY SHIP SEMEN?

Even under the best conditions, transporting horses long distances can be stressful and costly. Mares with foals are of special concern, since foals are particularly vulnerable to disease and injury when exposed to new horses and environments. Older or injured mares, or those requiring special care, may also benefit from staying closer to home during the breeding season. The ability to ship cooled semen makes it possible for breeders to arrange matings that might otherwise be impractical due to distance, economics or health issues.

GOOD CANDIDATES

Many—but not all—horses are good candidates for the use of cooled, transported semen. Both mares and stallions should be in excellent reproductive health, since fertility problems tend to be compounded when transported semen is added to the breeding equation.

With shipped semen, there is generally only one opportunity per cycle to breed a mare. Problem breeders may fare better at the stud farm, where they can be monitored and serviced at regular intervals throughout their heat cycles.

Also, be aware that not every stallion's semen cools or ships well. Therefore, it is critical for a stallion's sperm viability to be checked after a dose has been extended and cooled for 24–36 hours. This is generally the interval between collection and the time the transported semen is placed in the mare.



If you are planning to raise a registered foal, be sure to check the appropriate breed association's rules regarding semen transport in advance and follow them. While registry acceptances are growing, not every breed registry permits the use of transported semen.

INTENSIVE MANAGEMENT

Breeding with cooled, transported semen is more management—intensive than with on-site matings. Timing is critical. For the greatest chance of pregnancy, a mare must be bred from 12–24 hours before ovulation and up to six hours after ovulation. To more accurately determine the time of ovulation, many mares are treated with a hormone to speed follicular maturation and ovulation.

THE MARE

Prior to breeding season, a mare should have a full reproductive examination. A uterine biopsy, culture and cytology may be indicated to get a clearer picture of the mare's overall reproductive health. During breeding season, the mare should be kept where she can be teased by a stallion on a regular basis in order to detect onset of estrus reliably.

Once the mare comes into heat, your equine practitioner will need to predict the onset of ovulation accurately—allowing time for the semen shipment to arrive. The veterinarian will monitor the mare daily or every other day via rectal palpation and ultrasound examination throughout her heat cycle to determine the appropriate time for insemination.

THE STALLION

The stallion should also be evaluated for fertility prior to the breeding season. Semen should be tested by extending, cooling and storing it in the same way it will be handled for shipping. Commercial extenders have different formulations. The stallion manager or veterinarian may want to test the semen to see which extenders promote the greatest viability. Proper handling is also important. Here are some considerations:

- Pregnancy rates have been shown to be higher when insemination doses contain at least 500 million progressively motile sperm (pms). Because there is variability in the ability of a stallion's spermatozoa to withstand the cooling process, its semen should be evaluated for viability after cooling to determine how many progressively motile sperm need to be included in the initial dose to ensure 500 million pms at the time of insemination.
- Veterinarians and stallion managers should have the necessary equipment to determine sperm concentrations and motility accurately. Doses should not be estimated.
- Semen extenders should contain antibiotics to help reduce bacterial contamination and the spread of disease.
- A high-quality shipping container is essential to semen viability; directions should be followed exactly.
- Due to variability between individual characteristics of each stallion's semen, the procedures for extending, shipping, handling and insemination may vary. Directions from the attending veterinarian or stallion manager should be followed precisely.
- Adequate paperwork describing semen numbers, motility and collection time should accompany the shipping container so that the inseminator has a better understanding of the semen quality and viability upon arrival.
- Any semen, which remains after the mare has been bred, should be checked for quality.
- In general, semen not used within 48 hours will have poor viability.
- Certain disposable shipping containers may not provide an adequate environment for the preservation of semen viability with some stallions.



COMMUNICATION & COOPERATION

Good communication between stallion and mare managers is essential. Coordinating semen shipments will take planning and cooperation. Most stallion managers plan collection schedules so as not to overtax a stallion's fertility or reproductive performance. Collections made 3—4 times per week will accommodate most cooled, transported semen requirements without negatively affecting fertility; thus allowing breeders to also meet on-site demands.

The mare should be on a regular teasing and examination schedule to reliably ascertain the proper time to breed. This will allow planning and timely shipment of cooled semen. Many overnight shipping services provide prompt, reliable deliveries and can reduce the need for last-minute trips to the airport.

COSTS

Transporting semen may have some cost-saving benefits; however, they can be offset by increased management costs. Additional costs may include:

- Special handling, shipping container rental and shipping charges.
- Board, mare care, teasing and management at a breeding facility or clinic.
- Veterinary examinations, palpations, ultrasound and artificial insemination charges.

CAVEATS

Pregnancy rates with transported semen may be somewhat lower than with on-the-farm breeding, depending on the particular stallion and its semen viability over time. This means more than one cycle to get a mare successfully in foal may be necessary. The mare owner absorbs the cost of additional semen shipments, veterinary procedures and mare care.

A TEAM EFFORT

Breeding with cooled, transported semen is a team effort requiring the expertise of qualified professionals. The goal is to produce a healthy foal in the most efficient, effective way. To prevent disappointment, undue expense and loss of valuable time, you must do your part to ensure success.

- Understand your responsibilities.
- Check the credentials and references of the breeders and veterinarians with whom you plan to do business.
- Choose stallion and mare management facilities and an equine reproductive specialist whom you trust.
- Establish a good line of communication between all parties.
- Visit the facilities if possible.
- Read your breeding contract carefully.
- Contact the breed associations with which you are affiliated for their guidelines.