



Breeding Your Mare

General Comments:

- Don't expect a stallion to "fix" the faults in your mare or vice versa.
- Spend some time researching a prospective stallion for your mare. Talk to breeders as well as trainers in your chosen discipline - see what's working.
- Make sure your mare is in good breeding condition. This includes up-to-date vaccinations and deworming as well as the mare being in good body condition.
- Track your mare's cycle - mark it on the calendar. This will save you time and money in the long run.

Practical Considerations When Breeding

Using Transported, Cooled Semen

ADVANTAGES

1. No need to transport the mare (and foal) long distances to the stallion, thereby reducing costs and stress to both.
2. Ability to choose from top sires across North America.
3. Prevents spread of disease.
4. Fewer injuries to mare and stallion compared to pasture or hand mating.
5. Increased genetic pool by virtue of larger number of stallions available.
6. Results in similar pregnancy rates as natural service.
7. Allows semen to be evaluated at time of collection and before insemination.
8. Permits use of injured stallions or mares and prevents the overuse of the stallion.
9. Allows use of older stallions.

DISADVANTAGES

1. Costs involving collection of stallion, shipping semen and mare management to detect ovulation and inseminate at appropriate time.
2. Expertise involved with ultrasound, heat detection, teasing and artificial insemination of mare.

Technique Used When Breeding Mares Using Transported, Cooled Semen

The natural breeding season of mares in the Northern Hemisphere typically last from April through October. Mares are long day breeders meaning that they cycle most regularly and with shorter cycles close to the longest day of the year (June 21). The average heat cycle lasts 21 (+/- 2) days during which a mare is in behavioral "heat" (showing visual signs of heat) for 5 (+/- 1) days and out of heat for 16 (+/- 2) days. Ovulation usually occurs about 24 hours before the end of heat. When mares are in heat one or more follicles grow on the ovary, then soften and release (ovulate) the ova. Most light horse mares ovulate follicles that range in size from 38 to 50mm.

The usual procedure we follow to determine the best time to order semen and breed the mare is to check the mare every day or two once she starts into heat. We do this by teasing, rectal palpation and ultrasound examination. The ultrasound examination gives us the best signs to follow to predict the time of ovulation. We use follicular size and tone, cervical tone, and uterine tone and edema as our main indicators.

Our goal in breeding a mare is to have the freshest semen possible and be breeding the mare as close to ovulation as possible. The older the semen is at the time of ovulation (that is, the time elapsed from collection of the semen to ovulation of the mare) the lower the conception rates will be. To determine the best time to order semen we take into account the days of the week that the stallion is collected and the length of time the semen takes to be delivered. Most stallions have satisfactory fertility up to 48 hours after collection but we prefer to have the mare ovulating prior to the semen being 30 hours old. Therefore we like to re-order semen if a mare has not ovulated within 48 hours of the original collection.

We, at Equine Services, will look after all the procedures required to breed your mare with cooled semen - ordering the semen, organizing the shipment of the semen and the delivery to the clinic, filling out forms re breed registry requirements, returning semen shippers if necessary, evaluating the semen motility upon arrival at the clinic as well as breeding your mare. Please feel free to phone us with any questions you may have.

PRACITAL CONSIDERATIONS WHEN BREEDING USING FROZEN SEMEN

There are many advantages and disadvantages to using frozen semen in horses depending on each individual's situation. As well, the costs will vary considerably depending on the individual stallion and the availability of expertise and accommodation of the mare. Therefore there are no two situations that are alike. The following is a brief outline of what are generally the pros and cons for the use of frozen semen and some guidelines for the costs involved.

ADVANTAGES

1. Access to semen from stallions from everywhere in the world.
2. If long distances are involved, it is cheaper to ship the semen to the mare, than to transport the mare, and possibly the foal, to the stallion.
3. Avoiding long distance transportation reduces the stress on the mare and the foal and thus reduces the chances of disease.
4. The cost of a single shipment of frozen semen generally will be more than a shipment of cooled semen but with frozen semen one shipment of multiple doses is usually all that is necessary, whereas multiple shipments are often necessary with cooled semen.
5. The breeding season can continue even if the stallion is at a performance event, ill, injured or unavailable due to other breeding commitments.
6. Compared with cooled transported semen, there is no need to have the mare's ovulation timed with the days that a shipment is available. Frozen semen can be stored at the breeding farm and used whenever the time is right to breed the mare.
7. Frozen semen can be kept "forever". Therefore it can be collected and stored in the off-season and used whenever needed during the breeding season. It can also be used after the stallion is dead or gelded, if the breed registry permits.
8. The cost of processing frozen semen is variable, but for the average horse, the cost per insemination dose of frozen semen is usually less than cooled semen.

DISADVANTAGES

1. Generally, conception rates are lower with frozen semen compared to both live cover and cooled shipped semen. The conception rates with most frozen semen is at least 10% less than with other methods, all other factors being equal.
2. Conception rates with frozen semen are improved if insemination is timed as close as possible to ovulation. Therefore more intensive management, sometimes including palpations or ultrasounds three or four times a day, is required to handle and breed a mare with frozen semen. This will increase the cost of getting the mare bred when compared to cooled semen and live cover. However, depending on many other factors, including the availability of semen and the cost per insemination dose, the total cost of getting a mare pregnant can be comparable with cooled semen. Each case has to be analyzed individually to determine which method is the best choice.
3. More expertise and equipment is required to freeze semen on a stallion and to breed a mare compared to other techniques. A liquid nitrogen tank is required to store frozen semen and thawing frozen semen is more technical than handling cooled semen.
4. Frozen semen tends to cause more inflammation in the mares uterus, potentially leading to reduced conception rates and infection in susceptible mares.

PROTOCOL AND COSTS INVOLVED IN USE OF FROZEN SEMEN

Although we vary our protocol considerably when managing mares that are to be bred with frozen semen, we generally use one of two protocols. The first method is called "timed breeding" where two doses of semen are most often used. With this method, the mare's cycle is followed daily, when her follicle becomes 35-mm. or greater, HCG is given. The mare is rechecked for ovulation with the ultrasound in 24 hours. If she has ovulated then she is bred. If she has not ovulated she is usually bred in 6 to 12 hours and then again in another 12 to 14 hours if she has not ovulated at the 30 to 36 hour examination. HCG will most often induce ovulation between 30 and 44 hours. Our goal with this protocol is to be breeding between 12 hours before ovulation and 6 hours after ovulation.

The second method is called "breeding to ovulation", where only one dose of semen is required, and our goal is to breed within 6 hours of ovulation. Again we follow the cycle and when the follicle reaches 35-mm., we give HCG. The mare is rechecked in 24 hours and then every 8 hours after that until she ovulates. Once she has ovulated, she is bred.

The disadvantage of this method is that it involves up to 3 palpations/ultrasounds per day, and therefore, usually costs more than the timed breeding. The advantages of this method are that: 1) only one dose of semen is required; and 2) because insemination is most often closer to ovulation, the conception rates tend to be slightly higher. This is particularly true if the semen quality is low. Timed breeding is usually the choice if, 1) two doses of semen are available, 2) the semen is good quality, and 3) the cost of using two doses is not prohibited.

As with all well managed mare breeding programs, both methods usually involve the use of daily teasing; some hormone therapy to induce a predictable heat and a properly timed ovulation; and frequent rectal/ultrasound examinations to determine the time of ovulation. Because of the need for more frequent examinations, both protocols usually cost more than breeding with cooled semen. Frozen semen tends to be quite irritating to the lining of uterus therefore oxytocin is given 4 to 8 hours post-breeding to empty the uterus of any excess semen.

Generally speaking, breeding with frozen semen costs more than cooled semen; more examinations are required and the conception rates are lower, therefore requiring more breedings. Contact the clinic for further discussion and information on costs.