

CEDAR RUN VETERINARY SERVICES

CARING FOR HORSES DOGS AND CATS

This article is meant to be a fairly complete tutorial for mare owners that are looking to breed with either cool-shipped semen or frozen semen. The purpose of this article is to give the mare owner a plan of action for the upcoming breeding season to help maximize pregnancy rates. The rough outline for the plan involves: jumpstarting mares to cycle in late winter, doing uterine evaluation on mares prior to breeding, treating mares with uterine infections, and breeding mares with high quality semen.

Winter Transition

The first step to any breeding plan is getting mares to cycle after winter transition. Mares stop cycling during the short days of winter. As days begin to lengthen in late winter, mares begin to go through transition, where they begin to have hormonal activity, but are not yet having regular, predictable, estrus cycles. A mare's first ovulation of the year corresponds roughly with the shedding of the winter coat. It can be detected by ultrasound exam, and by a behavioral pattern of about 5 days of heat, followed by about 16 days of being out of heat. Mares can be tricked into cycling early by artificially lengthening their exposure to light, providing adequate nutrition and in some cases providing a supplemental heat source. The majority of mares put under lights (160 watt bulb per 12 foot box stall until 11 PM daily) will have their first ovulation within 6 weeks. Mares that are in poor condition may not cycle regardless of what you do. Mares in cold climates that do not cycle may respond to the addition of supplemental heat, either by lamp or non-hooded blanket.

Mare Evaluation

Once the mare is cycling, her reproductive tract should be evaluated to identify any problems that might interfere with fertility. Evaluation involves palpation and ultrasound of the uterus and ovaries, evaluation of vulvar conformation, uterine culture, and either uterine cytology or biopsy.

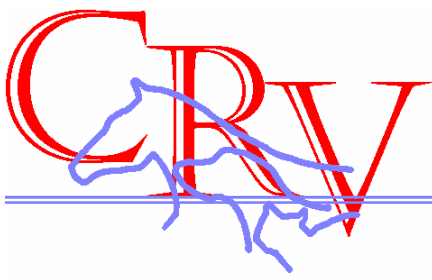
Palpation and ultrasound allow identification of cyclic activity, and identification of abnormalities such as intrauterine fluid or sunken vulvar conformation which often result in uterine infection. Ultrasound can also identify uterine cysts, which should be mapped out to minimize confusion during future pregnancy evaluations.

Uterine culture allows identification of the presence of abnormal bacteria or fungus in the uterus. Uterine infection represents the major cause of infertility in the mare. Infections need appropriate treatment prior to breeding to prevent further compromise to the uterus and financial waste in breeding infected mares. Culture should be accompanied by either a uterine cytology or biopsy.

Uterine cytology and biopsy give information regarding the presence and severity of infectious organism and inflammation in the uterus. The severity of inflammation and infection roughly correspond to the likelihood of a mare's ability to become pregnant. Also, some uterine problems can be identified on cytology or biopsy in the absence of organism growth on culture. Biopsy is often recommended over cytology in older mares, or mares with a history of infertility because the information provided gives a better estimate as to how likely a mare is to be able to carry a fetus to term.

Thoroughly examining mares prior to breeding allows you to enter the breeding season with a realistic idea as to: how likely your mare is to become pregnant and produce a live foal; what needs to be done to prepare your mare for breeding; and how expensive it is likely to be to get your mare pregnant.

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Breeding Plan

The breeding plan consists of first treating any current problems that may interfere with fertility, breeding the mare, and post-breeding management of the mare. Stallion choice and breeding are covered in a different section.

After a thorough evaluation, a treatment and breeding plan can be devised. If an infection is identified, plan on spending at least one cycle treating the infection, and one cycle resting the uterus before breeding. Bacterial infections are usually treated by infusing appropriate antibiotic into the uterus for 3 to 5 days while the mare is in heat. Other uterine conditions are addressed on an individual basis.

Once the problems have been addressed, the mare can be bred. Mares that have had uterine problems are often managed intensively with Oxytocin being administered 6 and 12 hours post breeding, and/or rinsing of the uterus with sterile fluid (Lavage). These treatments are directed at assisting the mare in fluid evacuation from the uterus to prevent post-breeding infection. All mares, regardless of prior problem, should be checked 24 hours post breeding to ensure that she has no signs of inflammation, including post-breeding fluid retention. If there are no problems and she has ovulated, she is not examined again until her pregnancy check. Further treatment with Oxytocin and/or Lavage is continued during daily ultrasounds until all problems or fluid in the uterus are gone.

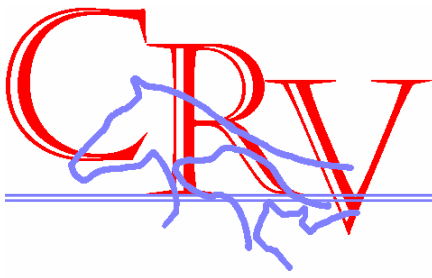
Stallion Choice and Breeding

When choosing a stallion for a mare, it is important to remember that not all semen is created equal. Industry average pregnancy rates with fresh and cool-shipped semen are about 70%. Industry average pregnancy rates with frozen semen are about 50 to 70% depending on the stallion. It is important when screening stallions to ask many questions:

- What are the pregnancy rates with the type of semen desired for the stallion?
- For cool-shipped semen, have test cools been done and what is the progressive motility at 24, 48 and 72 hours post collection? (should be greater than 20% for acceptable quality)
- For frozen semen, have mares been impregnated with the frozen semen from this stallion?
- For frozen semen, are there a limited number of doses available? (industry preference is to breed with 2 doses per cycle, in cases of limited availability or great expense of semen, 1 dose per cycle can be used, but requires evaluation of the mare every 6 hours when she is close to ovulation for adequate timing of insemination)

After choosing semen, the mare is bred. To minimize the chance that the mare will get infected during breeding, most veterinarians try to inseminate the mare once with high quality semen. The timing involves pre-breeding mare evaluation for follicle size and maturity (sometimes daily for up to 3 days), and administration of an ovulatory inducing agent such as hCG or deslorelin. These agents help induce ovulation in a predictable time frame (within 36 hours with hCG, and 48 hours with deslorelin, such that insemination can be closely timed to the predicted time of ovulation. Choosing a high quality semen source and adequately timing insemination help eliminate the question of whether semen quality and insemination timing are contributing factors in the event of poor fertility rates.

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Summary

In summary, for mares that have failed to become pregnant, it is important to get them cycling early to allow time to evaluate and treat any existing problems, devise a breeding plan involving breeding with high quality semen, and post-breeding evaluation to identify and treat any breeding complications.

Getting a mare pregnant that had fertility problems can be time, emotionally, and financially consuming. However, proper evaluation and treatment pre-breeding is often more cost effective than going through multiple breeding cycles unsuccessfully. Thorough evaluation also allows the owner foresight into the likelihood that a sub-fertile mare can become and stay pregnant. This allows a mare owner to decide whether or not to breed a mare before entering into costly stallion contracts.

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