

## **Breeding Steps: Conception Matters**

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### **Why Is the Time of Breeding Important?**

The average life span of normal sperm is 24-48 hours. The life span of the ovum (egg) is 6-8 hours after ovulation. Because the egg has such a short life, the most common practice is to breed the mare before she ovulates. This improves the chances for fertilization since the sperm live longer. Shipped cooled semen may live slightly longer because semen extenders are used which increases the sperm's longevity. Frozen semen does not live very long, thus the timing of insemination must be very close to ovulation.

### **Where Does Fertilization Occur?**

The stallion deposits the semen into the uterus. The average ejaculate contains 6 billion sperm cells. The sperm must swim through the uterus and enter the oviduct (fallopian tube). This process takes approximately 4 hours. Fertilization occurs in the oviduct. The embryo will remain in the oviduct for 5 days. This gives the uterus time to clear out all of the excess fluid and contaminates and prepare for the embryo.

### **Why Does the Embryo Location Matter?**

The mare's ability to clean the uterus after breeding and prepare it for the embryo can be a major cause of infertility. If the mare has poor "uterine clearance" sterile post-breeding lavage can improve the environment for the embryo. After the mare is bred, 4-6 hours need to be allowed for the semen to advance into the oviduct. This is the earliest time that the post-breeding lavage can be performed. Lavage plus

oxytocin will remove the remaining sperm and ejaculate fractions that can induce inflammation. There is no risk of "washing away" the ovum or sperm at this point, because they are safely out of the way in the oviduct. This will give you a few brief days to help the mare clean the uterus so that the environment is better for supporting the life of the embryo.

### **Why Does the Day of Breeding During Foal Heat Impact Conception Rates?**

The pregnancy rate achieved by breeding on foal heat is 10-20% lower than that achieved by breeding on the following estrous cycle. The reason for this decline is the failure of the uterus to completely restore itself to the pregravid state that can support an embryo. Vaginal exudates and uterine fluid decreases to a non-detectable level by day 15. The endometrium (uterine lining) usually has a normal pregravid appearance microscopically by day 14 postpartum. Mares that ovulate after day 10 have a better chance to conceive because the embryo will not descend into the uterus until day 15 when the environment is more likely to support the embryo.

### **Why Should Twins Be Identified Early?**

The embryo enters the lumen of the uterus 5-6 days after fertilization. The embryo is free to move in the uterus until it becomes stationary about day 16. The growth of the embryo restricts its movement usually to the base of one horn. The conceptus does not become "attached" to the endometrium until day 40-45 of gestation. The embryo is not detectable until day 9-10

via ultrasonography. The ideal time to eliminate twins is between days 14-16 when the embryos can be separated and one can be crushed as far away as possible from the other embryo.