

Ministry of Agriculture, Food and Rural Affairs

Foaling and Predicting Foaling Time

Table of Contents

1. [Introduction](#)
2. [Parturition](#)
3. [Tests to Predict Foaling](#)
4. [A Note of Caution](#)
5. [Care of the Newborn Foal](#)
6. [References](#)

Introduction

It can be frustrating watching mares and predicting when they will foal. Mares are usually consistent in their foaling pattern from year to year. Therefore, horse owners and managers should become familiar with each mare and record their observations on the mare's record. The average gestation length of a mare (period between breeding and foaling) is 340 days. It can vary within 20 days either side. In one study, 65.5% of mares foaled at night between 8 p.m. and 1 a.m.

The visual signs of a mare's readiness to foal are:

1. Udder distension begins 2-6 weeks prior to foaling.
2. Relaxation of the muscles of the croup 7-19 days prior to foaling; relaxation around the tail head, buttocks, and lips of the vulva.
3. Teat nipples fill 4-6 days prior to foaling.
4. Waxing of the teats 2-4 days before. Waxing (or wax beads) refers to the colostrum (first milk) which appears at the end of the teats.
5. Dripping of colostrum 24-48 hours before foaling. Loss of colostrum may result in an inadequate supply for the newborn foal.
6. Prior to foaling, the mare's body temperature will be equal to or drop lower than her normal morning temperature.

Parturition

Stage 1 In the **preparation phase**, the mare becomes nervous and uneasy and will lie down and get up frequently. The tail will twitch. Sweating, urination and signs of mild colic are common. *Stage 1* lasts for 2-3 hours and terminates with the "breaking of water" when 2-5 gallons of uterine fluids are released.

Stage 2 In the **active parturition stage**, the mare's cervix dilates and uterine contractions increase. The feet and nose of the foal are forced into the pelvis and eventually the amniotic sac and encased feet are seen protruding from the vulva. The mare is usually lying down and the contractions normally expel the foal in 15 minutes. The mare will generally remain lying to allow the blood from the umbilical cord to pass to the foal.

Stage 3 The final stage involves the expulsion of placental membranes. The placenta is usually passed within 15 minutes to one hour. Draft mares may take longer. Should the mare retain the placenta for four hours, consult your veterinarian promptly.

Tests to Predict Foaling

There are various tests which use the changes in calcium carbonate level in mammary secretions to predict the probability of foaling in a given time period e.g., in the next 24 hours. Sampling begins 10 to 14 days prior to the mare's expected foaling date. Once the unit values of the test exceed 100 ppm for calcium carbonate with the FoalWatch kit, or zone 3 with a hardness check kit, then it is important to check the mammary secretions twice each day.

Hardness Check Kit

D. Freeman, Equine Specialist, Oklahoma State University, suggests using a water-hardness check strip. These strips detect the relative levels of the minerals, calcium and magnesium, in water samples. The test strips are inexpensive and are available at hardware stores.

Items required are: test tubes, distilled water, a syringe, a container to obtain milk and the check strips. Distilled water is used because it is relatively free of these minerals.

1. Begin several days before the suspected foaling date.
2. Obtain 10 ccs of milk by hand milking.

3. Using the syringe, draw 6 ccs of distilled water and 1 cc of milk into the syringe.
4. Mix the sample and place it in a test tube that has a test strip in it.

The test strips have 4 zones that change color, depending on the mineral concentration. A zone change from level 1 to level 2 usually indicates that the mare is approaching foaling within 2-4 days. Zone changes from level 3 to level 4 usually indicate that the mare is expected to foal within 24-48 hours. The test should be done daily when 2 zone changes are observed. Move the mare to the foaling stall or paddock when 3 or more zone changes have occurred. The test is simple but not 100% accurate.

FoalWatch Test Kit

This kit is designed specifically to predict foaling. It is very sensitive and specific, with a useful predictive value indicating a mare's readiness for birth. The calcium carbonate levels of the colostrum will rise above 200 ppm when the mare is ready for birth. In the study, 98% of the mares tested with calcium carbonate levels equal to or greater than 200 ppm foaled within 24 hours. Maiden mares had a greater frequency of foaling before colostrum calcium carbonate levels were greater than 200 ppm. FoalWatch may be available from your veterinarian or by contacting CHEMetrics 1-800-356-3072.

Interference with Results

1. Distilled water is needed to wash the equipment used for these tests since a residue of hard water will interfere with the results.
2. Some mares will plateau at 100-175 ppm for several days before increasing.
3. In certain regions of North America, fescue toxicity will reduce the mammary secretions of mares. This is a condition known as agalactia. The lack of milk and the lack of udder development will interfere with an owner's dependance on physical signs to predict pending foaling and will result in no milk to sample.

A Note of Caution

Owners or managers may want to predict when a mare will deliver so personnel can observe the delivery and intervene if necessary. The down-side of trying to predict the time of foaling is the inaccuracy (variability) of testing and adverse effects on the mare and foal. There may be health implications to

the mare if the collection of mammary secretions results in mastitis (infection of the mammary gland). Stimulation of the mammary gland may also result in milk letdown in the udder and subsequent loss of colostrum. Although these risks are uncommon, they should be considered when developing management strategies for the foaling mare.

Care of the Newborn Foal

A foal will usually get up within an hour of foaling and should nurse within 2 to 4 hours. Nursing should be within 4 hours to maximize the absorption of colostrum antibodies. The foal's intestinal tract can absorb antibodies from the colostrum for the first 24 hours after foaling. The foal should pass meconium (a yellow fecal material) by 6 hours after foaling. The navel should be dipped in tamed iodine or chlorhexidine solution for several days after birth. Ask your veterinarian for advice on the need to give tetanus antitoxin at birth and antibiotics.

This is also a good time to perform imprint training with your foal. Imprint training introduces the newborn foal to various stimuli, such as: hair clippers, sprayers, and tapping on the feet. Refer to Dr. Robert Miller's educational material on *Imprint Training of the Foal*.

References

1. Freeman D.W., Oklahoma State University, Equine Specialist
2. Ley W. B., Management of the Foaling Mare: Predicting Readiness for Birth and Inducing Foaling. *Veterinary Practice*, June 1994 p. 570-577.

For more information:

Toll Free: 1-877-424-1300

E-mail: ag.info.omafra@ontario.ca