

## MHCO Spring Clinic 2005 – Reproduction for the Miniature Horse

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The following handout is based on information from reputable sources as well as the experience and opinions of the author. Opinions on reproductive management vary. **Participants are encouraged to take as much from the clinic as they wish and to seek the advice of their veterinarian for any concerns with regards to their own animals.**

*Miniature Horses have not read the book on reproduction. They don't follow the rules so keep in mind that despite what is covered below, when it comes to minis, anything goes.*

### “Doing the Deed”

- There are many ways to accomplish the actual breeding of your mare. Whether you choose to pasture or hand breed depends on many factors including your facilities, your expertise, how risk averse you are, and the time you have to spend monitoring and managing your horses.

#### Pasture breeding

The points below assume that the horses have continuous free access to each other with minimal supervision. It is possible to control turnout and observe the horses to record when the mares actually get bred. This increases the work for the breeder but also gives you estimated foaling dates.

Pros	Cons
Stallions take care of heat detection.	Risk of injury to mare/stallion.
“It’s natural”.	Unsure of exact breeding dates.
Minimal labour for the breeder. Extra handlers not required.	Stallion may focus on a favourite mare/ignore others that are in heat.
Don’t require separate field for the stallion.	Multiple unnecessary covers increases risk of infection in the mare.
Don’t put handlers in danger if horses are hard to handle or people are inexperienced.	Can’t be sure of highly concentrated semen in the mares that need it.

#### Hand breeding

This involves teasing the mares daily to determine the best time to breed and controlling when the stallion can cover the mare. During the act of breeding both horses are under the control of capable handlers.

Pros	Cons
Minimize the risk of injury to the mare/stallion.	More labour intensive than pasture breeding.
Know exact breeding dates/can estimate foaling dates	Requires competent handlers for both horses.
Minimize the number of covers, spares the stallion and reduces the chance of infection in the mare.	Can be dangerous for inexperienced handlers.

#### Using an Outside Stallion

- Sending your mare to someone else’s stallion is a good way to bring different bloodlines into your herd and lets the stallion owner worry about teasing and breeding your mare.
- Stallions are cheap but good stallions are not. Resist the temptation to use a poor quality stallion to try and save money on stud fees. Let someone else buy a nice stallion, pay to keep it all year and then pay them for the privilege of a piece of good genetics.
- More Miniature owners should choose this route and only the best stallions should be used for breeding.

#### Teasing/Detecting Heat

- When teasing, use a secure barrier that allows the stallion to touch/sniff/talk to the mare but protects him in case she is not interested. Allow the stallion to work the front and back ends of the mare.
- Give the horses adequate time to interact as some mares will change their tune from their first reaction.
- Mares will vary in the signs they show as the heat period progresses. Look for lifting of the tail, winking of the vulva and squirting of urine in response to the stallion. She should not kick at the stallion or show resistance to approach him or back up to him.

- Handlers need to be alert at all times as mares who are not interested may kick or strike with a front foot. Stay out of the line of fire!
- When the mare shows these signs a stallion can be allowed to approach her without the barrier. You should only do this if you are prepared to allow him to breed her. Don't assume you will be able to pull him away once he's committed.

### Preparation for Breeding

- The entire area under mare's tail should be washed and rinsed prior to breeding. This includes the peri-anal area, the vulva, and the "butt cheeks". Use a gentle, non-spermicidal soap (Ivory or Betadine soap (not scrub)). RINSE WELL!
- If he'll allow it the stallion's penis should also be washed. You can try and do this while he is teasing over the barrier as the penis will be dropped. BE CAREFUL NOT TO GET KICKED!
- Wrap the mare's tail. Stray tail hairs can cause lacerations to the stallion's penis when he penetrates. If not treated properly these lacerations can quickly become serious problems.

### When to Breed

- The mare's cycle is 21 days long (from the first day of one heat to the first day of the next).
- Most mares will be in heat for 5-9 days. The mare ovulates 24 hours before the end of her heat cycle. The goal of your breeding program is to have viable sperm in the mare when she ovulates.
- Sperm survives in the reproductive tract of the mare for at least 72 hours.
- The egg is viable for 8-12 hours after ovulation.
- Wait for your mare to show good signs of heat and stand well to be mounted. Then it is standard practice to **breed her every other day until she will no longer stand for the stallion.**
  - ❖ Ultrasound can be used to look at the ovaries and narrow down the time of ovulation. This practice is common in large horses but Miniature owners are not taking advantage of this tool.

**FAQ** – "It's April and my mare has been in heat for the last 14 days! What's going on?"

**A** – Mares are seasonal breeders. They stop cycling over the winter and start up again in the spring. This is not an all or nothing event. They will go through a period in the spring where they are called "transitional". At this time they may have multiple large follicles on their ovaries which won't ovulate at the expected time. It is normal and will resolve on its own and be followed by normal cycling for the rest of the summer.

**FAQ** – "My friend says she always walks her mare after breeding so she doesn't pee out all the semen. Is this necessary?"

**A** – The stallion deposits his semen at the cervix (the opening to the uterus). From there the little swimmers are quickly on their way to their final destination. Some semen will be seen leaking out as the stallion withdraws but keep in mind it takes very little to fertilize the egg. You will still find vets are divided on this issue. On the one hand pasture bred mares don't walk after breeding and they still get pregnant. On the other hand if you have 5 minutes to spare it doesn't hurt to walk her around.

### Pregnancy Diagnosis

So after all your work getting her bred you want to know if you've been successful. You won't find many (if any) vets who will put an arm in these little girls so how can you find out?

#### Teasing/Wait and See (cost: free)

- Most people will start teasing their mares 21 days after the day they first showed signs of heat. If the mare didn't get pregnant she will come into heat again at that time. If she doesn't come into heat they consider her settled and wait for a foal.
- Mares often catch when they are bred only to reabsorb the embryo within a few days if conditions in the uterus aren't right. If this occurs the mare will cycle on a different schedule when you may not be looking for it.
- Knowing a mare is pregnant is important when deciding on how to feed her over the winter. If you feed an open mare as though she were pregnant she will most likely look pregnant by the spring!

### Ultrasound (cost:~\$40/mare +call fee)

- A small number of vets are equipped to do rectal ultrasounds on Minis using a probe extension (the arm stays out!).
- The ultrasound can be done as early as 14-16 days but generally they do them at 45-50 days.
- If the embryo is found U/S is 100% accurate. The earlier the pregnancy the harder it can be to find the embryo.
- If done early there is the potential to detect twins and deal with them.
- If done properly the risk of rectal tearing is minimal.
- External ultrasounds can be done in advanced pregnancy.

**FAQ** – “The ultrasound at 60 days said my mare isn’t pregnant. She never came back into heat after I bred her so I thought she was for sure. Now I want to re-breed her but she’s still not coming into heat! Is the ultrasound wrong?”

**A** – Not likely. At approximately 35-45 days into the pregnancy the equine placenta forms a ring of structures called the endometrial cups. The cups secrete Equine Chorionic Gonadotrophin (ECG) which assists in the maintenance of pregnancy. The cups regress at approximately 125 days. During the time that the cups are present the mare’s body believes she is still pregnant even if the fetus is lost. She will not come back into heat until the cups have regressed.

### Blood Tests (cost: check with your veterinarian)

- Progesterone can be measured in early pregnancy. Levels are low when the mare is in heat and high when she is pregnant (or just not in heat). Therein lies the problem. It is a more reliable test to prove a mare is not pregnant (ie. low progesterone around the time she is due to come back into heat).
- ECG can be used to test for pregnancy between day 50 and day 115. Keep in mind that the hormone indicates the presence of the endometrial cups and the test will be positive if a pregnancy was present at 35 days when the cups form even if it is lost after that point.
- Estrone sulfate is a form of estrogen that is produced by the fetus and placenta once the cups are gone (after day 150 to be sure). At this stage of pregnancy this is a reliable test of fetal viability. This means the fetus is present AND alive.

**FAQ** – “I thought my mare was pregnant but now she’s showing signs of heat around my stallion. Did she lose the baby?”

**A** – It is possible that she lost the foal. However, mares are unique as a species in that they have high levels of estrogen during pregnancy. Since estrogen is the hormone responsible for sexual behaviour it is not uncommon to see some signs of heat in a pregnant mare. These mares are not actually cycling, won’t ovulate and usually will not stand to be bred.

**FAQ** – “My mare was just bred. Can I show her this year?”

**A** – This question is often debated and depends largely on your mare. A mare that gets stressed about travelling and showing is not as good a candidate for showing while pregnant as one who is very relaxed. A mare that has lost previous pregnancies while showing at the same time should be given a chance to carry a foal while chilling out at home. Immediately after breeding (first 5-10 days) a mare should be able to safely travel without risk of losing the conceptus. The most risky period is from 10 days to about 20 days. After that time the embryo/fetus is quite well protected and the mare should be able to live her normal life.

**FAQ** – “My mare is supposedly 8 months pregnant and I wanted to check and see if she was still in foal. The progesterone came back low. Is she open? Should I be supplementing her with Regumate?”

**A** – In late pregnancy the foeto-placental unit takes over the maintenance of pregnancy by producing a hormone similar to progesterone. This hormone does not register on the progesterone test so levels are really variable in pregnant mares. Supplementing Regumate at this stage is of no use.

## The Long Awaited Event

### Waiting for Baby

- Mares give of lots of signs that they are getting ready to foal. The challenge is that we don't always notice. Maiden mares can show more subtle signs. Due to the high incidence of foaling problems in the Miniature Horse it is very important to be present for the birth. Sometimes very simple assistance can be the difference between life and death for the foal or even the mare.
- Watch for development of the udder, softening of the muscles around the tail head, dropping of the abdomen, relaxation of the vulva etc. These signs can be seen several weeks before the actual birth.
- Check your mares daily in the last couple of months before their due date. Know what's normal so you know when something changes.
- Consider one of the various foaling alarms on the market and a barn camera to watch your mare without disturbing her.

### Testing the Milk to Predict Foaling

- When testing colostrum pay attention to the colour and consistency. As the mare prepares to foal it will become yellow and sticky.
- Several kits are available which are based on the level of calcium in the milk. Calcium rises significantly as foaling approaches and is a reliable indicator that the foal is prepared for life in the outside world. The kits contain strips that you dip in diluted milk (follow kit instructions) and watch for a colour change in the 5 squares. Once a mare has reached 5 squares she should be ready to foal. Be forewarned that the strips are more reliable if they say she won't foal then if they say she will. Mares have been known to test 5 squares for several days before foaling.
- Once you have a mare that is testing 4-5 squares you can use the same milk mixture to test the pH. Buy test strips that are meant for pools or spas. Choose a strip that measures in the 6.0-7.8 range (or as close as you can get). The pH will be in the mid to high 7's and one day will drop to below 6.5. In my limited experience mares have foaled within 12 hours of the pH drop. I encourage people to try this test to see how it works for them.

### When Things Go Right

1. The mare shows any or all of the following; restlessness, pacing, rolling, looking at her sides, yawning, passing feces more frequently, pressing her butt on the wall, sweating, and so on. This stage can last minutes to hours.
2. The chorioallantoic membrane ruptures releasing a large volume of fluid (the "water"), and the mare starts to push with abdominal contractions.
3. In a few minutes a grey-white sac (the amniotic membrane) appears at the vulva. The first foot is visible inside the sac followed by the nose and second foot.
4. The foal is advanced with each push and the entire foal is delivered in under 30 minutes. The amniotic sac over the foal breaks allowing the foal to breathe and the umbilical cord remains intact until the mare stands. After it breaks dips the umbilicus in iodine.
5. The placenta should pass within 3 hours. Tie it to the mare's tail so the weight of it applies traction but the mare can't step on it and tear it.
6. The foal should stand within an hour of birth.
7. The foal should nurse well within 6 hours of birth.

### When Things Go Wrong

In most cases you don't have time to wait for your vet if you want to save the foal. Once you detect a problem you should call your vet before trying to fix it yourself.

- The Red Bag Delivery – If you see a velvety, red membrane instead of the grey-white amnion the placenta has detached prematurely and the foal is being deprived of oxygen and you must get it out quickly. Use a sharp object to carefully rupture the red bag and release the "water". Then find the foal's legs and head. Pull on the legs with each push by the mare to speed the delivery. Monitor the foal for signs of oxygen deprivation (slow to stand/nurse, poor suckle reflex).

- Dystocia – This is the term for any deviation from the normal position of the foal (described above). Some are simple to correct with a little knowledge while others require a veterinarian to remove the foal and save the mare. Get a good foaling book and familiarize yourself with the different problems and what you can and can't do to fix them. If in doubt call your vet right away so they can be on their way if you can't fix things.
- The Umbilical Cord Doesn't Break – A lot of Mini mares pass their placenta before they even get up leaving it attached to the foal as it tries to walk around the stall. Tie the cord at about 1 inch from the foal's belly and cut the cord between the tie and the placenta. Then you can dip the stump in iodine.
- The Placenta Hasn't Passed in 3 Hours – This can quickly become an emergency situation for your mare. Do not try to pull on the placenta! Call your vet to treat it before the mare becomes toxic.
- The Foal Doesn't Stand or Doesn't Nurse – A foal needs to get colostrum in its first 6-8 hours in order to make use of the mare's antibodies. A foal that is not nursing will become weak and deteriorate quickly. Call your vet to come out and tube the foal. Foals that were slow to nurse can have their antibody level tested at 18-24 hours. Ask your vet for this test if you are concerned.
- Colic - Mares are often crampy after foaling and may appear mildly colicky and lay down a lot. Ask your vet if you can have a dose of Banamine (do not give Banamine before the placenta has been passed) on hand for mild discomfort. Keep in mind that mares occasionally suffer serious colic after foaling. If your mare is severely painful or does not respond to Banamine call your vet immediately.

### **The Problem Mare**

**FAQ** – “My mare won't come back into heat when she has a foal at her side. Do I have to settle for 1 foal every other year?”

**A** – Maybe. Some mares don't show heat with a new foal. This could be because she wants to protect her new baby from the stallion or because she is producing so much milk for the baby that her body shuts down her cycling. There are a few options you can try:

1. Wean the foal – Usually not a good option. The health of her current foal has to be your first concern.
2. Regumate protocol – Mares can be given Regumate orally once per day for 10-14 days starting 14 days after foaling followed by a single injection of Prostaglandin on the first day after you stop the Regumate. The mare should come into heat 2-7 days after the injection. Contact your veterinarian for drugs and dosages.
3. Domperidone protocol - Mares can be given Domperidone (pills) once daily starting 20 days after foaling and continuing until she comes into heat. This is a human drug and you will need a vet's prescription. Consult for your vet for dosages and advice on using this protocol.

*Thanks for making the 3<sup>rd</sup> annual MHCO Spring Clinic a success!*

*Hope to see you again next year...*