

Feeding Orphan Foals

by: Christina Cable, DVM, Dipl. ACVS

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Orphan--the name itself evokes sadness and sympathy. A baby without a mother, in this case a foal. Whether it occurs through the death of the mare, or just that the mare cannot produce milk or will not take care of her foal, it all leads to one problem: How to care for the foal.

In the past, there have been two standard options:

1. Raise the foal by hand as an orphan, using some form of milk replacer, or
2. Lease a nurse mare.

Now there is a new development in the management of orphan foals that we will also discuss, a way to turn a barren or empty mare into a surrogate mom--and a milk-producing one at that.

Many people used to feel that an orphan foal could never turn out to be a successful horse because he would be smaller than a normal horse, or he would be an adult with abnormal behavior. Now, with the help of science, many orphan foals have gone on to be healthy, well-adjusted adults.

Newborn Orphans

A newborn orphan poses a special dilemma. Foals which are orphaned at birth will require some form of milk or colostrum within two to three hours. After that time, their small energy reserves will be gone, and they will be facing hypoglycemia (low blood sugar from not eating enough). So, be prepared to feed an orphan in the unlikely event the worst happens.

If the mare dies before the foal is 24 hours old, then the baby needs supplemental colostrum. This first milk a mare produces contains high concentrations of antibodies, which are necessary for the foal to fight off infection. Without the antibodies that colostrum provides, the foal is very likely to develop a life-threatening infection. Time is critical, as the foal needs colostrum within the first two hours of life. After 18-24 hours, the foal can no longer absorb the antibodies from his gastrointestinal (GI) tract.

Obviously, if you are faced with an orphan foal situation, contact your veterinarian for assistance. Sometimes tube feedings are needed, and these foals especially need to have their immunoglobulin (IgG) levels checked at 12-24 hours of age to make sure they got adequate antibody protection. (For more information, see the Foal Care and Problems section at The Horse.com.)

Bottle or Pail Feeding

When newborns are orphaned, the easiest method to get them to nurse is with a bottle. Their instincts are to suckle, and they will usually readily nurse from a bottle, especially one with a lamb nipple. (Calf nipples are usually too big for them to nurse easily.) Whichever you use, make sure the hole in the nipple is not too large--when the bottle is turned upside down, milk should not flow out of the nipple. If it does, the flow is too fast and the foal might accidentally inhale the milk (aspirate) while drinking.

In addition, foals fed from a bottle have to be standing or in an upright position to nurse. This will lessen the chance of the foal aspirating and developing pneumonia. Do not hold the bottle

over the foal's head. Instead, make the foal reach down, then up for the nipple (hold about the level of the mare's stifle). If the foal had a chance to nurse from the mare before he was orphaned, then getting him to nurse from a bottle can be a bit difficult. In these cases, drinking from a pail or bucket is not only easier, but less time-consuming. Remember, all foals should also have access to fresh water at all times.

Milk Substitutes

In a pinch, there are substitutes for equine milk. For example, if a young foal were orphaned in the middle of the night, how are you going to feed him through the night? The obvious initial choice would be cow's milk. However, cow's milk has too little dextrose (sugar), so if 2% cow's milk is used, a teaspoon of honey needs to be added per pint of milk. Goat's milk is closer to horse milk and can be fed without additives, but it is a bit expensive, especially if you are going to use it long-term.

Milk Replacers

Commercial milk replacers can also be used and are very convenient and palatable for foals. There are several formulations on the market that are very close to natural mare's milk. Calf milk replacers have also been used to raise foals, but some contain antibiotics, and those should never be used in foals. In addition, calf milk replacer does not contain enough protein for normal foal growth.

One of the problems with using milk replacer in foals is GI upset. Most foals will develop some degree of loose manure when the replacer is first used. This is common, and should resolve with time. If the foal develops diarrhea, the milk replacer needs to be diluted. Some foals might develop bloat (gas) from the milk replacer. If this occurs, discontinue feeding for two hours. However, if the foal begins to colic, becomes lethargic, or develops a fever, you should call your veterinarian immediately.

Once a foal reaches about one month of age, he is ready for solid food. Foals are great mimics, so if they had been with their mothers, they would have started to eat solid food (grass, hay, or grain) at two weeks of age, sometimes sooner. I like to offer orphan foals hay and a very small amount of grain at two to three weeks of age. Orphan foals not raised with foster or nurse mares should begin creep feeding (grain) by one month of age; a high-protein (16%) grain can be used. For foals which are not raised with a foster mare, the milk replacer can usually be discontinued by three to four months of age, as long as adequate grass and/or hay is available.

Nurse Mares

If a foal has been orphaned, the best way to provide milk and proper socialization is with another mare. A nurse mare is weaned from her own foal and the orphan foal is fostered onto her. There are several farms that keep pregnant mares for the sole purpose of providing nurse mares. The major advantage of a nurse mare is not only the ready supply of milk, but that the foal can be properly socialized.

Orphan foals raised solely by humans can develop behavior problems, as they might relate more to humans than horses. So, the benefits of having a foal raised with a mare are extensive. The one disadvantage of this solution is cost. Most nurse mare farms require the mare to be leased and re-bred, so the cost can often be \$3,000 or more for a season. However, once the foal is successfully fostered, then he has a ready food source and proper equine company.

Hormones Create Foster Mares

Within the last few years, a new technique for creating foster or nurse mares has been used more frequently. This involves using a mare which has had at least one foal, but is currently

barren. A series of hormones and an anti-dopamine drug are administered to the mare (orally and through intramuscular injections) to induce lactation in the mare. The drugs include Regumate, estradiol, sulpiride, and prostaglandin. The drug sulpiride is used as an anti-psychotic in humans, but it is also used in horses for its antagonistic effects on dopamine levels, as this encourages milk production in horses.

After one week of treatment with these drugs, the veterinarian stimulates the mare's cervico-vaginal region to simulate birth. The foal is then introduced. Although this process can be very successful, the mare might still reject the foal and not allow him to nurse, injuring the foal in the process. Therefore, the introduction of the mare and foal must be supervised by at least two people, the same as when introducing a nurse mare. One person controls the mare and the other guides and protects the foal. Even if she does accept the foal, the mare must continue to receive sulpiride twice a day for up to two weeks to keep her lactating. After that time, she should lactate normally on her own.

The benefits of this procedure are:

1. That you might be able to use an otherwise open mare on your own farm;
2. The cost of the hormone treatment is around \$400-\$800 and most likely there is no rebreeding requirement.

The only downside I have witnessed is the injections. The mares often get sore from the multitude of intramuscular injections required to keep them lactating. The risk of rejection of the orphan foal is about the same with a recently weaned nurse mare; mostly it depends on the personality of the individual mare. Seek out mares with mellow personalities which have foaled and raised at least one foal.

I used this protocol in two mares this past year when we were faced with orphaned foals. One was very successful, which is described in "An Orphan's Tale" on the opposite page. The second foster mare rejected her foal, but we were able to obtain a nurse mare which worked very well. Also, if a foster mare is not an option, raising an orphan with a gentle gelding, or even other weaned foals, can be successful.

Take-Home Message

Orphan foals now can be raised safely and successfully in a variety of manners. In fact, today it can be difficult to tell the difference between orphans and those raised with their mothers.

AN ORPHAN'S TALE

This spring, a lovely bay Thoroughbred colt was born on my favorite farm. Life was wonderful for the gorgeous colt as his days were filled with playing in the pasture and nursing all the time. Unfortunately, tragedy hit like a lightning bolt and the colt's mother died of a colon torsion when he was three weeks of age. We all remarked on how brave he was as an orphan, and so, the name Viggo was a perfect fit (brave, gorgeous, poetic male--for those people who are not Lord of the Rings trivia nuts, think Aragorn).

The owners did not want the expense of a nurse mare, and supplementing with milk replacer was taking its toll on the humans and the foal. After discussion with a theriogenologist (reproductive specialist) at Cornell University, a new plan was forged. They were beginning to have some success using empty or barren mares as lactating surrogate mares. On this particular farm, there just so happened to be a 26-year-old mare which had been a great mother in her day, but had been barren for the last several years. After eight days of treatment with Regumate, estradiol, sulpiride, and prostaglandin to stimulate milk production, a vaginal exam was performed on the mare to simulate the birth process, then the mare and foal were introduced.

Viggo did not hesitate and went straight to the udder. The mare squealed a bit at first, but within a few hours she was licking the foal and they were bonding. They lived happily ever after, until they were weaned. As for how our hero will perform on the racetrack, we will have to wait a year or so, but as we already know, he became a great king in the books and movies!--*Christina Cable, DVM, Dipl. ACVS*

Readers are cautioned to seek the advice of a qualified veterinarian before proceeding with any diagnosis, treatment, or therapy.



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