

## The Orphan Foal

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The birth of a long-awaited foal is an occasion to celebrate. All of the planning, breeding dates, pregnancy checks, and hopes finally are realized. But what if the unthinkable happens--the mare becomes ill, or she doesn't produce any milk, or worse, she dies. What do you do with the foal? How do you care for him/her? How and what do you feed the little one? This article will discuss some of the options/considerations for caring and feeding of orphan foals.

Those of you who are new to breeding and raising horses might have never experienced the dilemma of raising an orphan foal or feeding a foal whose mother is producing little or no milk. It is a very real problem and can be a very time-consuming ordeal. Foals can lose their mothers for any of a variety of reasons, such as colic, uterine hemorrhage, or the mare can reject her foal completely. Other problems can occur that result in the inability of the mare to produce adequate milk for the foal, such as mastitis (infection of the mammary gland), metritis (infection of the uterus), or any other serious illness. If a mare is grazing fescue pastures while in late pregnancy, there is a fungus that can live on the grass named *Acremonium coenophialum*, which if ingested by the mare will block her ability to produce milk for her newborn foal. The foal is not an orphan technically, but another source of milk must be found immediately. This fungus also can lead to other serious problems with foaling, such as dystocia or a weak foal.



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### Newborn Orphans

Newborn foals rely entirely on their mother's milk for nutrition. The first milk a foal ingests is colostrum. It is essential as it provides much-needed immunoglobulins that help a foal fight off infection, since foals are born with a virtually inactive immune system. Therefore, if a foal is orphaned at birth, it is a particular emergency to find another source of not only milk, but of colostrum.

Remember, a foal is only able to absorb the immunoglobulins from the colostrum for approximately 12 hours. Therefore, it is imperative that colostrum be administered as soon as possible. If colostrum is not available, the foal will need to be administered intravenous plasma by your veterinarian within the first 24 hours of life. Equine plasma contains immunoglobulins to help protect the foal from infection--but this is expensive at about \$150 per liter. A 100-pound foal needs one to two liters of plasma if he/she has not received any colostrum. If colostrum is available, the newborn foal needs about 250 ml of colostrum every hour for the first six hours, then free-choice every one to two hours.

The foal then should be tested by your veterinarian at 18-24 hours of age to determine if it has had adequate absorption of immunoglobulins. If the absorption is low, then the foal should receive intravenous plasma as a booster. Otherwise, it will be susceptible to life-threatening infection.

Now comes the next problem--how to get the foal to drink.

### Nurse Mares

If a foal has been orphaned, the best way to provide milk is through a nurse mare. The orphaned foal is fostered onto another mare which has lost her foal, or had her own foal weaned. There are several

farms that raise pregnant mares specifically for the service of providing nurse mares. This might sound like a perfect answer; however, there are some problems.

Nurse mares can be expensive, anywhere from \$1,000-\$1,500 for leasing the mare, plus most farms require that you are responsible for re-breeding the mare. Secondly, fostering the foal onto the mare can be time-consuming. (For further information, see the article on Foal Rejection in *The Horse* of February 1997, p. 49.)

However, once the foal is successfully fostered onto the nurse mare, the foal has an ever-ready food source and he/she will be socialized properly. The fostering process should not be attempted without an experienced person to supervise, since often the mare must be sedated and/or restrained to prevent injury to the foal. Mares can be placed into stocks or hobbled to prevent them from kicking the foal. However, two people are needed at all times while introducing the mare and foal--one to restrain the mare and one to guide and protect the foal.

The mare and foal should not be left alone until the mare has fully accepted the foal. Signs of acceptance include the mare nickering to the foal when the foal is led away, and the mare allowing the foal to nurse without resistance. Acceptance of the foal can take up to three days, but usually occurs within 12 hours.

### **Bottle Or Pail Feeding**

If a nurse mare is not an option, or if the mare rejects the foal, the next option is bottle feeding or pail feeding the foal. If the foal has never nursed from the mare, it usually will be quite willing to nurse from a bottle. Lamb nipples are excellent, as they resemble a mare's teat the closest. If these are not available, Gerber NUK nipples, which are designed for human babies, can be used. Calf nipples usually are too big for foals to nurse effectively. Whichever is used, 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--otherwise the flow is too fast and the foal might aspirate milk while drinking.

Foals which are fed from a bottle need to be placed in an upright position to nurse. This lessens the chance of milk traveling down the foal's windpipe instead of the trachea (aspirating) and developing pneumonia. To simulate a natural position for nursing, stand with your back to the foal and hold the foal's nose underneath your arm. Then gently insert the nipple into the foal's mouth (make sure it is over the tongue). The foal might bump your arm with his/her head, but this is normal--it is how the foal stimulates the mare to "let down" milk.

Do not hold the bottle above the foal's head as this position can make it very easy for foals to aspirate milk.

Healthy foals usually will drink only until they are full, so the foal should be allowed to drink free choice after it has consumed colostrum in the first 24 hours. It also is a good idea to record the amount of milk consumed at every feeding, especially in the first few weeks of life, since this can help alert you to a decreasing appetite or ensuing illness. Remember to clean the bottles and nipples after each use.

If the foal has been nursing a mare, then getting it to nurse from a bottle can be quite difficult. These foals might be more likely to drink from a pail or bucket. Pail feeding is definitely less time-consuming and has an advantage since the foal can drink free choice.

Foals usually are able to be taught to drink from a pail. Milk is placed on your fingers and inserted into the foal's mouth to stimulate the suckle reflex. With your fingers still in the foal's mouth, lower your fingers into a pail of warm milk while the foal is suckling on your fingers. Eventually, it will get the idea. With this method of feeding, a bucket of mare's milk or milk replacer can be left in the foal's stall or paddock and changed every six to 12 hours. The bucket or pail should be hung at chest level for the foal to drink, and it should be cleaned every time the milk is changed. Remember, all foals should have access to fresh water at all times.

### **What to Feed**

The next question is what type of milk should be fed to the foal. Mare's milk is the perfect solution, as it alone matches the nutrient needs of the foal. However, few breeding farms or even equine hospitals have enough milk stored to feed a foal for more than a few weeks--but if available, should be used preferentially.

Otherwise, milk from other animals can be used. Cow's milk or goat's milk usually is readily available; however, neither is the perfect substitute. Cow's milk and goat's milk both contain more fat than mare's milk, and cow's milk contains too little dextrose (sugar). Therefore, if cow's milk is used (2%), then one teaspoon of honey should be added per pint of milk. Goat's milk can be fed without alteration, but is more expensive than cow's milk. Some foals prefer the taste of goat's milk over cow's milk.

Commercial milk replacers can be used and are a convenient and very acceptable alternative to mare's milk. Several formulations specially for the foal now are available, and these are the most desirable. Whichever brand is used, the replacer should contain about 15% fat and 22% crude protein, so check the label before purchasing.

The most common milk replacers for foals used in my area are "Mare's Match," "Foal Lac," "Foal Life," and "NutriFoal." This is by no means a complete list, and other foal milk replacers are perfectly acceptable.

Calf milk replacers also have been used to raise foals successfully. However, many calf milk replacers contain antibiotics, which should never be used in foals. Furthermore, calf milk replacers historically have not contained enough protein for normal growth of the foal. Newer milk replacers are more acceptable--read the label or talk to your veterinarian before purchasing. Goat or lamb milk replacers also are alternatives, but the nutritional requirements for foals are quite different from those supplied by these replacers, especially the mineral ratio of calcium to phosphorus. If these types of replacers are used, make sure your veterinarian finds the growth rate of your foal acceptable.

One of the complications with using milk replacers is gastrointestinal upset. Some foals will develop loose manure when the replacers first are used. This is normal. If the foal develops diarrhea, then the milk replacer should be diluted with water or changed to another brand or type. If the diarrhea persists for more than one day, then your veterinarian should evaluate the foal and proper treatment can be instituted. Other foals might develop mild bloat (gas) from the milk replacer. If this occurs, discontinue feeding for a few hours, and then feed a more diluted formulation or supply more frequent feedings.

Once foals reach about one month of age, they are ready for solid feed. A foal which is with its dam will mimic the mare's eating habits and begin to eat grass, hay, or grain with the mare at an early age (two to three weeks of age). These foals usually are introduced to a creep feed by one month of age. Orphan foals also should be introduced to grain at that time. Feeding milk replacer pellets also can be tried at an earlier age. The pellets usually have to be placed gently into the foal's mouth. Often the foal will spit them out until they get the hang of eating solid foods.

Foals should be fed a grain or pellet that has 16-18% protein. A good general rule of thumb for feeding is one pound of feed for each month of age until six months of age, or six pounds of feed, as recommended from an article written at Auburn University. Foals generally can be weaned from milk replacers at three to four months of age if adequate grass or grass hay and grain are available.

### **How Much And How Often To Feed**

A healthy newborn foal will nurse from its dam about seven times in one hour. This number decreases as the foal gets older. As a result, frequent feedings are most compatible with the foal's digestive system. Although calves often are fed only two to three times per day with large volumes at each feeding, this method is not acceptable for foals ingesting only milk.

Foals require anywhere from 21-25% of their body weight in milk per day. The ideal approach is free-choice feeding of milk to ensure the foal's requirements are met. This is quite easy with the bucket or pail feeding method. However, with bottle feeding, the newborn foal will need to nurse every hour for the first week of life, then can decrease to every two to three hours after the first week. As you can see, the bucket feeding method

has its advantages.

The problems arise when the foal is ill and is not consuming enough milk. If this happens, your veterinarian should be notified and force feeding (via a nasogastric tube) must be instituted. Sometimes the foal will need to be taken to an equine hospital for intensive care in order to ensure adequate nutritional support as well as treatment for the underlying illness. In severe cases, intravenous fluids must be administered to correct and prevent dehydration. But how will you know when your foal is consuming enough milk?

Newborn foals should drink about five to seven liters per day in colostrum and milk. Remember, healthy foals need between 21-25% of their body weight in milk per day, so a 75 kg foal will need about 19 liters of milk per day. Foals also should gain about one to two kilograms of body weight per day. Contact your veterinarian if you are unsure if your foal is consuming enough milk or is not growing appropriately.

### **Special Problems Of Orphans**

Raising a foal is a time-consuming job. One main problem with humans raising foals is that the foal will identify with the human species, not the equine species. This might be cute when the foal is a newborn, but it presents its own set of problems as the foal gets older. Foals raised by people without contact with other horses have been shown to fear and avoid other horses later in life. One study even showed that foals raised by humans did not learn how to graze properly. Orphan foals also will nurse themselves, other foals, or other horses--male or female. These problems can be eliminated by raising the foals with another horse or pony as a role model.

The raising of an orphan foal can be a challenging and very time-consuming job, but it can be done with a healthy, well-adjusted foal as the end result. The loss of a mare is not a death sentence for the foal. Raising an orphan foal, however, should not be attempted without the guidance of your veterinarian.

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



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