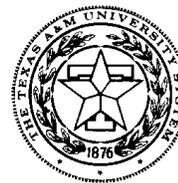


**TEXAS A&M UNIVERSITY
DEPARTMENT OF ANIMAL SCIENCE
EQUINE SCIENCES PROGRAM**



DESIGN AND USE OF CREEP FEEDERS FOR FOALS

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A creep feeder is a facility consisting of a perimeter fence with a feed trough located internally. It is used to provide a balanced, high quality concentrate to young nursing foals prior to being weaned. The practice of creep feeding serves to supply nutrients beyond what a foal receives from the milk. Secondly, creep feeding minimizes the intake of broodmare feed that can sometimes lack the amounts of protein and minerals needed by foals relative to the energy intake⁴. Many broodmare feeds contain between 10 and 14% crude protein. Although balanced for a mare, some of these feeds are rich in energy and the protein: calorie or mineral: calorie ratios are inadequate for growing foals. Creep feeders also decrease the chances for injury to a foal when competing for feed from the mare's trough. And lastly, creep feeders allow foals to become accustomed to eating concentrates before weaning time.

A creep feeder should be easily accessible by foals where they can eat rather frequently and without competition from mares. Research has shown that young foals will nurse as much as seventy times daily, indicating that foals have limited ability to store feed and prefer many small meals. A properly designed creep feeder will let foals enter, eat and leave with ease and safety, while keeping mares out.

The construction or purchase of a creep feeder should take place before mares actually foal, or as soon as possible thereafter. This will give the youngsters ample time to become accustomed to the structure. Foals will show an interest in eating soon after birth, often consuming very small amounts of feed along with the mares. This is a good sign that creep feeding should begin and usually occurs by the

time foals are two months old. In many cases, nutrient secretion by mares may not be sufficient for foals once they reach three months of age⁴. Although optimum growth rate and specific energy requirements have not been identified for suckling foals, data from one study indicate that average milk-energy from mares accounts for less than 30% of energy needed by a four-month-old weanling¹. Consequently, there is some implied need for supplemental feeding of foals prior to weaning.

TYPES OF FEEDERS

The type of creep feeder that should be built or used, its size and the cost, all depend on the facilities in which mares and foals are kept and the number of foals that will be fed. Commercially manufactured creep feeders are available for purchase and are a consideration for many horse owners. Some persons may prefer to build a creep feeder using either treated lumber or pipe and the following guidelines are provided to assist mare/foal owners with that process.

In situations where mares and foals are kept in a dry lot, corral or small paddock, perhaps the simplest design is a corner feeder. The most economical corner creep feeder can be constructed by using one post, two boards (2" x 6") and a feed trough (see figure 1).

Minimum suggested sizes for the perimeter of a creep feeder depend on the number of foals. The following are general guidelines, at best, and size will be further influenced by foal behavior, broodmare

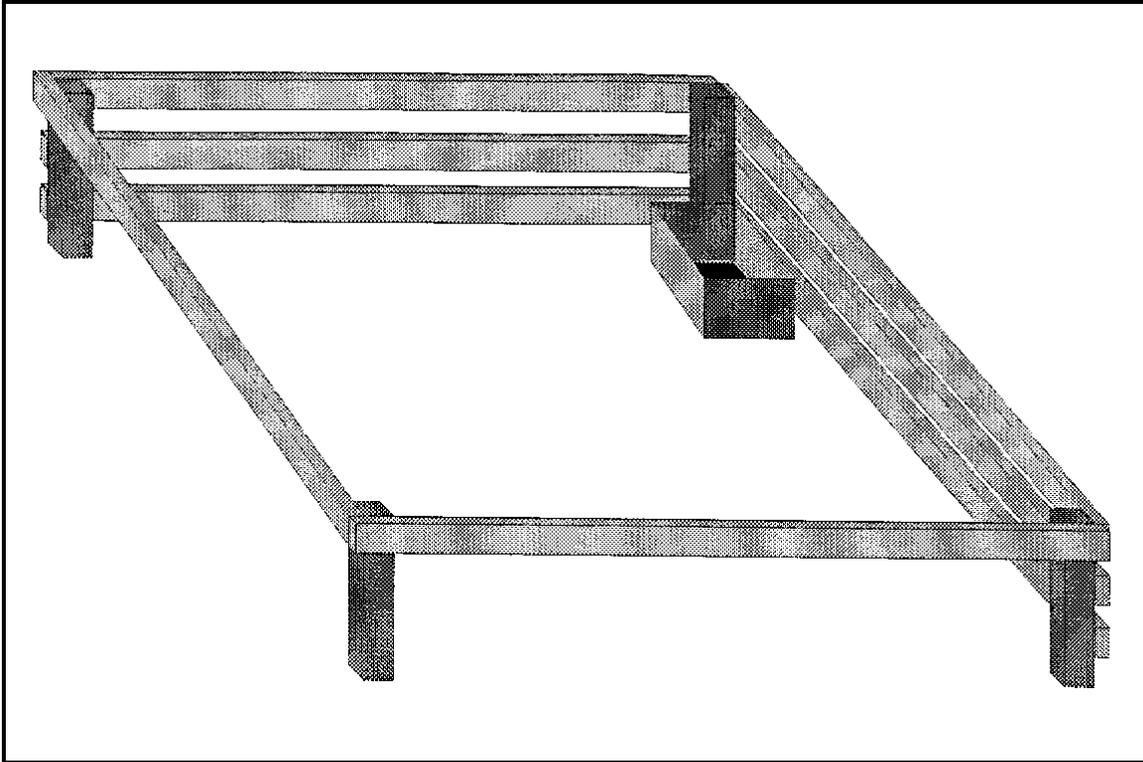


Figure 1. This is an example of a corner feeder. Note that the 3 - rail portions of the enclosure represent previously existing fences.

# Foals Eating	Minimum Perimeter Size
1	8 ft. X 8 ft.
2	10 ft. X 10 ft.
3	12 ft. X 12 ft.
4	14 ft. X 14 ft.

behavior and other factors. If three or more foals are being creep fed, then the trough should be located in the creep feeder such that foals can stand on two sides of the trough, always with their tails toward an exit area.

The perimeter fence should let foals in and keep mares out by at least restricting the height of the opening. The best overall approach is to also regulate entrances and exits by width, which further discourages mares from trying to enter the creep feeder. The size of the openings into the feeder depend on the age and size of the foals and should be built so that adjustments can be made. For typical stock-type

and thoroughbred foals from mares weighing between 1,000 and 1,300 pounds, the height should be approximately 4 feet. This is the distance from the ground up to the bottom of the board or pipe which is fixed horizontally. Width restrictions should usually range from 22 to 26 inches, with two feet serving as an average.

A creep feeder restricted only by height with a horizontal board or pipe at about 4 feet will offer entrance and exit anywhere along the length of that structure. For creep feeders accommodating more than one foal and being restricted by width, there should be one more opening than the total number of foals using the creep feeder. For example, a creep feeder for three foals should have at least four openings where foals can enter/exit.

Although creep feeders are usually very effective, it is still a good idea to hinge one side or portion of a side that can be opened if necessary. Some mares will literally crawl into a creep feeder but often require manual removal

after they have consumed the feed.

In pasture situations, creep feeders should always be located in an area where mares normally congregate. Therefore, feeders are often placed in close vicinity of normal eating or drinking spots. One advantage to pasture creep feeders is that they can be built out in the open, allowing foals to enter/exit from all four sides. Many creep feeders are built similar to a small round pen, letting foals eat from a trough in the center of the circle. To minimize injury to foals from kicking and biting, entrances and exits should be available in many places around the circle. So, if foals can stand at any point around the trough, exits should be available all around the perimeter fence (see figure 2).

The perimeter size recommendations and height/width restrictions for a pasture creep feeder should approximate those mentioned previously for a corner feeder. As the number of foals increases, the size of the feeder should increase. Again, there are no specific sizes.

However, based on a standard of 144 square feet for a mature horse, the following creep feeder sizes seem to make sense for foals:

# Foals Eating	Minimum Perimeter Size
5	16 ft. X 16 ft.
6	18 ft. X 18 ft.
7	20 ft. X 20 ft.
8	24 ft. X 24 ft.

At some point owners will be faced with a decision to either increase feeder size or build a second feeder. Careful monitoring of foal behavior and eating patterns will impact this decision.

A loafing shed located in a pasture makes an excellent creep feeder. With minor adjustments the opening can be restricted, providing foals a covered creep feeding area. The only limitation is the loss of a place for

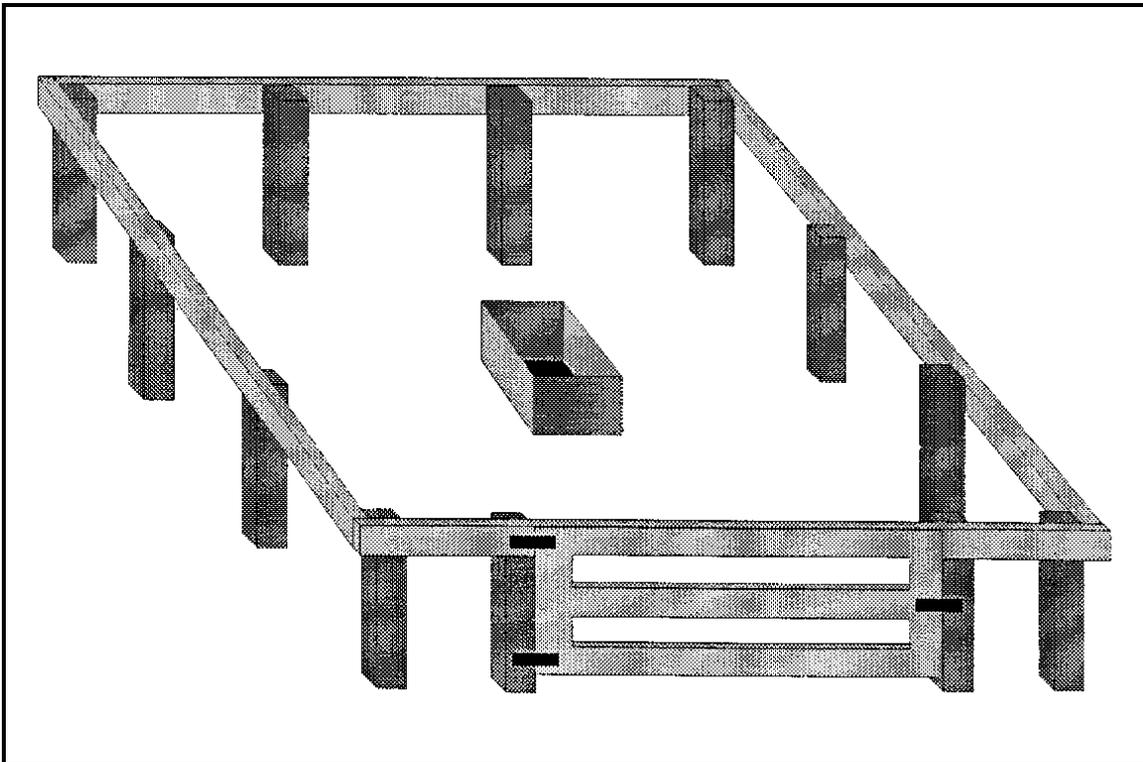


Figure 2. A creep feeder which allows for entry/exit from all four sides.

mares to get during inclement weather. But, if the pasture offers a natural shelter belt of trees to provide some protection from sun, wind or cold, many mares that are in good body condition seem to actually prefer staying outside.

Where a mare and foal are being stalled, there is usually inadequate room for erecting a creep feeder, per se. One solution is to purchase a foal feeder (trough) with adjustable bars over the top of the trough. These bars can be regulated in width so the foal can reach feed in the trough, but the mare cannot. These feeders should be securely mounted low enough on the stall that they can be reached easily by foals, but where mares cannot kick or rub them down. Careful daily checks are required to ensure the bars are properly affixed and the feed is fresh.

SELECTING A FEED

As stated previously, a foal's protein and mineral needs relative to its energy needs differ significantly from those of a broodmare. Plus, hay or grazing serves as a foundation for broodmare feeding, with concentrates providing the remainder of nutrient requirements. Young foals are unable to consume and utilize large amounts of roughage, so the concentrate should be well fortified and carefully balanced. Horse owners have the flexibility of either formulating a creep ration using various feedstuffs, or purchasing a commercially manufactured concentrate that has been formulated for the young, growing horse. The amount of protein and minerals needed in the concentrate depends on the amount of energy (calories) supplied in the feed. The feed tags on most commercial feeds do not directly list the megacalories of energy provided, but they do list the percentage of crude fiber. As crude fiber levels decrease, energy levels increase, meaning that the concentration of protein and minerals must also increase. Table 1 can be used to determine minimum percentages of protein and minerals needed in feeds of varying crude fiber.

Some commercial feeds may contain supplemental fat. If so, the crude fiber percentage will remain about the same, but the

concentrate will contain more energy than a similar mix without any added fat. Please refer to the TAEX publication entitled **Feeding Young Horses for Sound Development** to read more about such rations. An example creep feed is also available in that publication for horseowners desiring to mix their own creep feed. Creep feeds should always contain at least 16% crude protein, .80% calcium and .50% phosphorus. When lesser amounts are provided, it is almost impossible for foals to eat enough feed to meet the minimum requirements for these nutrients. Protein quality is also very important and creep rations must contain sufficient amounts of the amino acid lysine to support growth⁵.

FEEDING MANAGEMENT

Creep feed should be provided for foals in the creep feeder at least once every day. As mentioned earlier, foals prefer many small meals. Therefore, creep feed should be introduced slowly and then usually should be available for foals at all times.⁴ Horseowners must avoid letting the creep feeder remain empty for a period of time and then pouring in a large amount of feed, because this situation can lead to overeating by hungry foals. Creep feed should be removed if spoiled by moisture or infested with ants and fresh feed provided in its place.

Some foals tend to be picky eaters and will sort the feed, often eating only the grain and leaving protein, vitamins and minerals in the bottom of the trough. This has prompted some owners to use pelleted feeds so that each bite a foal takes is balanced. A recent survey showed that over 30% of Texas horseowners feed pelleted feeds², so the decision should be based on availability of quality feeds, foal behavior and other factors. Groups of foals will all behave a little differently and some foals will show more dominance than others. Occasionally, one foal will stand in the creep feeder and try to prevent others from eating. Careful observation will identify such problems and allow owners to make adjustments in the amount of feed provided, trough placement and creep feeder size.

Table 1. Concentrations of Protein and Minerals Needed in Creep Feeds of Varying Crude Fiber Levels with No Supplemental Fat (3.0-3.5% crude fat shown on tag)

If feed tag indicates Crude Fiber % of	Then, the following minimums are needed		
	Crude Protein (%)	Calcium (%)	Phosphorus (%)
2%	18%	.90	.55
3%	18%	.85	.55
4%	17%	.85	.55
5%	17%	.80	.50
6-8%	16%	.80	.50

(with 3-3.5% crude fat)

IF YOU CAN'T CREEP FEED

In situations where mare/foal owners cannot utilize creep feeding practices, then certain measures should be taken to limit intake of feed that might contribute to growth problems in foals. One solution is to feed a well balanced foal concentrate to the broodmare. With this approach, foals eating from the same trough as the mare will be receiving adequate supply of nutrients without getting too much energy. This practice does result in mares receiving slightly more protein and other nutrients than they normally need, but it ensures that foals will receive a good supply of nutrients for skeletal development.

SUMMARY

Creep feeding programs should be designed to let foals learn to eat concentrates in a fashion that emulates the normal eating behavior of horses. A well constructed feeder, located where mares spend a lot of time, will help meet additional nutrient needs of foals while minimizing chances of injury. With some planning and limited cost, horseowners can establish a creep feeding program that will help in the process of developing a foal that will be easier to wean. Plus, foals will be receiving a more suitable concentration of nutrients for proper skeletal development, improving the likelihood that they will have greater longevity and usefulness as a sound, mature individual.

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