



Current Report

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Alternatives in Grain Selections for Horse Rations

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The rising cost of production is creating an urgency among horse owners and managers to redesign their feeding programs. Traditionally, especially in the Southwest, oats have been a uniform choice among the larger horse operations. Oats are palatable and are relatively safe because they are lower in energy density and higher in fiber as compared to other alternatives. Many feeding management routines of farms require a feed such as oats to insure low rates of colic and founder.

Oat prices have increased greatly over a year's time, and future expectations suggest that prices are to remain high in the future. This has created an immediate need to define alternatives that are more economical.

Meeting the Horse's Requirements

To begin, you need to be concerned with designing your feed to meet your horses requirements. The grain composition you select will depend on the classes of production of your horses. Growing horses and mares in gestation and lactation will have increased requirements than mature nonproducing horses for energy, protein, minerals and vitamins. For example, total protein requirements of mature, nonproducing horses are about 8 or 9 percent crude protein. Comparatively, growing horses and lactating mares may need about a 12 or 13 percent crude protein ration.

Also of concern is the selection of hay and pasture. Less nutrients will need to be supplied in the grain if high quality hay or improved pasture is being fed as compared to low quality hay or pasture. For example, if a 8 percent crude protein hay is mixed with a 10 percent grain mix at a one to one ratio, a total ration mix would be 9 percent crude protein. The same hay combined with a 14 percent mix would increase the hay grain mix to 11 percent crude protein. A hay that has 16 percent crude protein would combine with a 10 percent crude protein grain to produce a 13 percent overall mix if hay and grain are fed in equal amounts.

Several alternative grains can be included in a mix to design rations for various classes of horses. If done correctly, adjustments using alternative grains will better meet requirements than using oats as the total grain source.

Feeding Management Considerations

Anyone who has been involved with horses will attest to the fact that feeding management is one of the top concerns to help decrease the frequency of colic and founder. Any ration, be it oats or otherwise, require that it be fed in proper amounts, at proper times and in proper ways if horses are to remain healthy. That's why nutritionists will recommend management advice such as: Split feedings into twice a day if feeding moderate to large amounts of grain; keep feedings times regular and time them so they are 8 to 12 hours apart; make ration changes gradually; and feed horses individually in separate troughs. These are just a few management guidelines that will need to be followed no matter what grains are selected.

In terms of feeding management and alternative grain selection, several items need thought. One is how many grain mixes are you going to feed? Some farms have feeding programs that allow for several mixes to be designed, and specific grains are fed to specific production classes of horses. Other times, farms will want one grain that is designed to be fed to all classes of horses. In this case, a ration is designed to meet the need of the horses in production. Those horses needing less, such as the mature, nonproducing mares may be fed excess protein, minerals or vitamins; but rations can be designed to where it is not harmful to the horses or more costly to the farm.

Another universal concern is how horses are being fed, i.e. via group or individually. Individually fed horses can be closely monitored as to their intakes, so the chance of overeating is small if good feeding management is being used. This allows for more alternatives than when horses are being fed in groups. However, farm design, facility cost and labor

constraints will usually create a need for group feeding. As stated earlier, oats have been popular because they are relatively safe in their energy and crude fiber content (10 to 12 percent crude fiber). If an aggressive mare eats more than her allotted share, she will have less chance of colic when eating oats as compared to a grain that has more energy density or less crude fiber. So, there are certain guidelines to meet when designing alternative grain rations. Generally, grain mixes should have at least 8 percent crude fiber, and at least 9 or 10 percent when horses are group fed. If the farm is practicing proper feeding management, these levels will lower the chance of colic caused by overeating. There are several other guidelines for energy, protein, minerals and vitamins that are followed to insure a safe feed is being fed that meets the requirements of the feeding management program and the requirements of the horses.

Deciding on Bulk, Bagged, Custom or Commercial

The next decision that has to be made concerns how you are going to purchase your grain. Do you buy commercially prepared mixes, or do you develop a custom mix? Usually, those owners with few horses will limit their selection to what is commercially available in the bag because of ease and because of the small amount of feed needed at any one time. They are limited in the amount to purchase at one time because of the need to supply fresh grain. Many times, a good recommendation is to purchase only enough feed for several weeks because farm storage situations won't allow for longer times without the increased chance of feed contamination by mold or insects.

Those farms with larger grain needs have several options. In addition to what is commercially available in the bag, several feed companies will deliver the same feed in bulk at a cost savings to the farm. Many times, this savings is large enough that proper storage facilities can be built, and the farm will still save money. Also, if large enough quantities are needed, many feed mills will custom mix a ration that not only meets the desired nutrient specifications, but also will contain only specific feed ingredients. This allows for more uniform ingredients from batch to batch, as compared to using a least cost method of ration formulation.

Regardless of how feed is supplied, quality control is important. Consistency of rations should be uniform throughout the mix. Different batch mixes need to be uniform with one another. Also, top quality feed ingredients will be worth more than low quality sources because they will have more nutrients per pound and will be safer to feed. It is important that reputable feed companies and feed mills are the suppliers of your horse's feed no matter how you are having it delivered or mixed.

Processing Method

The processing method that is selected depends on the types and amounts of feedstuffs that

make up the mix, but there are some general guidelines that should be followed when deciding how best to prepare grains for horse rations. Grains can be fed whole, coarsely processed, or as a pellet. Grains such as oats can be fed successfully whole or unprocessed because the seedcoat is relatively soft and the horse can digest it. Processing oats will generally increase digestion by only a small amount. Barley and corn digestibility is increased to a larger degree by processing than for oats. Some grains such as wheat or milo may best be used in a pelleted mix because they need to be processed, but coarse processing methods that work well on these are often too expensive. Generally, processing will increase digestibility by 5 to 10 percent. If the processing method costs more than this, it may not be an economical alternative.

The important consideration in processing is that horse rations should not be finely processed or contain too much dust or meal because this will increase the chance of colic. The final decision on processing method will depend on how the entire mix will best be prepared to insure a safe consistency that is mixed uniformly throughout the entire batch.

Pelleted mixes are becoming more acceptable on farms because many combinations of ingredients require pelleting if they are to be fed safely and mixed uniformly. Switching from a whole grain mix to a pelleted mix requires proper feeding management to be safe. Pellets are packed tighter, so they weigh more by volume. Farms feeding by volume rather than weight will commonly overfeed horses when switching to pellets because of the higher density of pellets. Also, pellets should be relatively hard so they won't crumble easily when transported and stored. If not, they will be too mealy or dusty to feed safely. This is another area that requires confidence in your feed mill or supplier.

Grain mixes

Grain mixes are made up of high energy feeds (grain), a fiber source, a protein source, minerals and vitamins.

A traditional mix has been between 50 to 70 percent oats and 50 to 30 percent corn. Corn adds to the energy density of the mix, while oats will help the fiber and protein contents. Mixes without oats commonly include about 40 percent corn, barley, milo or wheat, with corn and barley receiving the most acceptance in horse rations. All provide various amounts of energy, protein, minerals and vitamins, and each requires certain processing methods. Corn and barley may be fed coarsely processed or as a part of a pellet, whereas, general recommendations for milo or wheat is to combine them with other ingredients and pellet.

A common characteristic of these alternative grain sources is they are generally to energy dense to feed as a single ingredient, so they have to be mixed with a crude fiber source to give a final fiber level of about 8 to 10 percent. Also, mineral and vitamin levels need to be balanced.

Some of the more common crude fiber sources are ground hay, dehydrated alfalfa meal, soybean hulls and cottonseed hulls. Most commonly, dehydrated alfalfa meal has been used as the fiber source with soybean hulls and cottonseed hulls the least. All must be fed according to the processing method that works best for the total mix.

The final mix will have added minerals and vitamins to insure proper balance of nutrients. If a coarsely processed grain mix is used, molasses is commonly added to help insure a uniform mix.

Summary

The belief that horses must have oats to survive is simply not true. Although oats are a

desirable alternative in terms of safety and palatability, the cost may be too much for farms. Switching to alternative grains does not mean you are cheating your horse out of nutrients; many times switching will increase the nutrient quality. Also, alternative grain mixes can be developed that are safe to feed. Foremost, feeding management practices and capabilities will be the important decision making constraint when determining alternatives. Alternative mixes must be balanced for nutrients, and also contain proper energy and fiber densities to insure safe consumption under general farm feeding management. It is not uncommon for feed costs to be reduced by more than 30 percent when farms identify alternatives, and then select the single choice that will be most safely and most economically fed instead of maintaining feeding practices based only on tradition.



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