

Questions & Answers

BY DR. KATHLEEN CRANDELL AND DR. STEPHEN DUREN

Because of the drought this year, we are already feeding hay to our horses. I am having a very difficult time finding hay to buy. A neighbor of mine has some barley hay he is willing to sell us, but I am nervous about feeding something that I am not familiar with. Are there any problems with feeding barley hay to horses? I have a few horses with HYPP. Is there too much potassium in barley hay?

The National Research Council (NRC) book entitled *Nutrient Requirements of Horses* lists an analysis of barley hay (see below). It would be best to send a sample of the hay to a forage testing laboratory for analysis of nutrient content before buying it because the values may differ from those listed here depending on the quality of harvesting.

Barley Hay (DM basis)

Crude Protein.....	8.8%
Crude Fat.....	2.1%
Crude Fiber.....	26.7%
Calcium.....	0.24%
Phosphorus.....	0.28%
Magnesium.....	0.16%
Potassium.....	1.47%
Copper.....	4.4mg/kg

The potassium content of barley hay is actually lower than most hays sampled. Barley hay generally has potassium levels under 2%. This would make this barley hay very suitable for a HYPP horse. Much of the problem that HYPP horses suffer from comes from their inability to rid excess potassium from the body, so keeping a diet as low in potassium as possible will often help the horse remain asymptomatic. Feeding a lower potassium hay and grain (such as oats) with a vitamin/mineral supplement is the simplest feeding program for a HYPP horse.

In the values listed above, the calcium to phosphorus ratio is inverted. In other words, there is more phosphorus than calcium (0.24:0.28 = 0.85:1). Horses fed diets with more phosphorus than calcium can develop a bone disease called nutritional secondary hypoparathyroidism, in which the body takes calcium out of the bones leaving them brittle and deposits it in the form of very weak, porous bone on the bridge of the nose and jaw. The ideal ratio of calcium to phosphorus in the horse is between 1:1 and 2:1. This does not mean that you would not be able to feed barley hay, only that you need to make sure that the rest of the diet has plenty of calcium. Plain grains such as oats tend to be low in calcium, so there is a potential problem if they are fed alone with the hay. It is possible that the particular barley hay you are thinking of buying may not have

an inverted calcium to phosphorus ratio. Having the hay analyzed will determine this.

In France barley straw is frequently fed as chaff (chopped straw and molasses). The straw is supplemented with a high quality concentrate to compensate for the lack of nutrients in the forage. I have not heard of any major problems with feeding barley hay and it is fairly palatable to the horse. By looking at the nutrient values given by the NRC, it appears to be a fairly low quality feed but should work fine as a source of essential fiber for a horse

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My stabled mare is receiving a balanced diet of hay and grain, and she has a mineral block in her feeder. She is in training, so I know she is getting adequate exercise. However, on several occasions I have seen her eating dry manure. I haven't noticed any of the other horses in the same barn doing this. Is she lacking a particular substance in her diet or is she just bored?

Young horses often eat fresh manure from other horses, a practice known as coprophagy. It is thought the practice is a means for establishing a normal bacterial population in the digestive system. Therefore, a foal eating some manure is not a big problem although it will make you think twice about letting the foal nuzzle your face. It is not common for mature horses to eat their manure. Several factors could precipitate this behavior. Horses that are eating a low fiber, high grain diet or a protein deficient diet may consume fecal material. An easy dietary adjustment is to increase the amount of forage fed and ensure the diet is providing adequate protein. Another factor that may cause horses to eat manure is boredom. Horses that do not get enough exercise or horses that have recently had their exercise decreased are prone to eating their manure. Providing the bored horse with turnout or simply less stall time should help the situation. Finally, it is often thought that horses who are missing something in their diet will eat manure. This is true in the sense that most horses consuming manure are underfed or in poor condition, but occasionally horses on a well-balanced diet will pick up this behavior.

Since this behavior has been detected in your horse only at this stable, it probably is not a glaring nutritional imbalance. It is, however, simple to have your horse's diet reviewed by a nutritionist. In the meantime, providing more forage and more turnout and perhaps providing the salt in loose form will help the situation.

I have read several of your columns about feeding extra calories in the winter to maintain body weight. Should a horse's diet be changed to compensate for hot weather?

The energy (caloric) intake of a horse can be visually monitored by watching the weight of the horse. If horses are being fed too many calories (too many groceries) they will begin to gain weight and eventually become fat. On the other hand, horses that are not getting enough calories in the diet will become thin and eventually will not be able to perform, athletically or reproductively. The amount of energy we need to provide a given horse depends upon the size and activity level of the horse. From a caloric standpoint, activity includes a number of demands such as reproduction, growth, and work (exercise). Horses should have their daily energy requirement provided to them regardless of whether it is summer or winter. In the hot summer months, recent research has shown it beneficial to provide some of the extra calories required by horses as dietary fat. Because fat (vegetable oil, rice bran, etc.) contains more than twice as many calories per pound as either carbohydrate or protein, a horse eating a fat-supplemented diet will need to eat fewer pounds of total feed. This lower feed intake results in less heat produced during the digestive process and less thermal load. All of these factors combine to keep horses cool and happy during the summer.


My neighbor says it is a common practice to sort through hay before feeding it to horses in order to check for blister beetles (extremely toxic insects). Do we have anything like that in the Northwest?

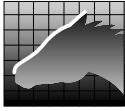
Blister beetles contain a poison (cantharidin) that is extremely toxic to horses. Unfortunately, there is not a specific antidote for cantharidin poisoning. Ingestion of even a few beetles results in severe colic and, many times, in death. The death of horses from blister beetle ingestion has been reported from Florida to Arizona and as far north as Illinois. The states known to have the biggest problems with blister beetles are Texas and Oklahoma. To date, blister beetle poisoning is not a problem for hay grown in the Treasure Valley region of Idaho, one reason hay for the 1996 Summer Olympic Games was purchased from Idaho hay growers. I agree with your neighbor, however, that regardless of your location or the incidence of blister beetle poisoning there a quick inspection of the hay you are pro-

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viding to your horse is always a good idea. There are many things that can be baled into hay that may not be good for your horses, including small, dead rodents that can potentially cause botulism, and aluminum cans that may cause digestive tissue damage.

My horse always acts like he is starving to death and he is a "gobbler" when he eats. I have always been afraid that he will cause himself to colic. An old horseman suggested that I put large rocks in my horse's grain bucket to force him to eat slowly. Is this guy crazy or will this help?

Many horses gobble their feed. This is a condition often referred to as bolting their feed. Horses that bolt their feed run the risk of choking. The act of chewing adds saliva to the feed, which lubricates it and enables it to be swallowed. If horses are not chewing their feed properly and adequate saliva is not added, the dry feed material can be lodged in the esophagus. Occasionally horses can clear the obstruction from the esophagus, but most will require veterinary intervention to resolve the problem. Your old horseman friend has offered a practical solution to your horse's habit of consuming the grain portion of his diet too rapidly. Simply adding large rocks to the feed bucket will force the horse to eat more slowly. The rocks should be large in size to prevent the horse from swallowing them. Another solution may be to offer the horse the hay portion of its diet prior to feeding grain. This will serve to fill the horse's stomach prior to the grain being fed. Continuous grazing is the natural feeding behavior of horses and most horses provided with that opportunity will be content to eat their feed slowly. Providing continuous access to grass hay will help to satisfy a horse that does not have access to pasture but the type of hay fed becomes very important. Free access to alfalfa hay will certainly make the horse happy, but depending on its activity level (or lack of activity) it may make the horse fat. Feeding smaller amounts of high calorie, dairy quality alfalfa may leave the horse feeling hungry and encourage bolting. 



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