

Basic Nutritional Guidelines for Equine Management



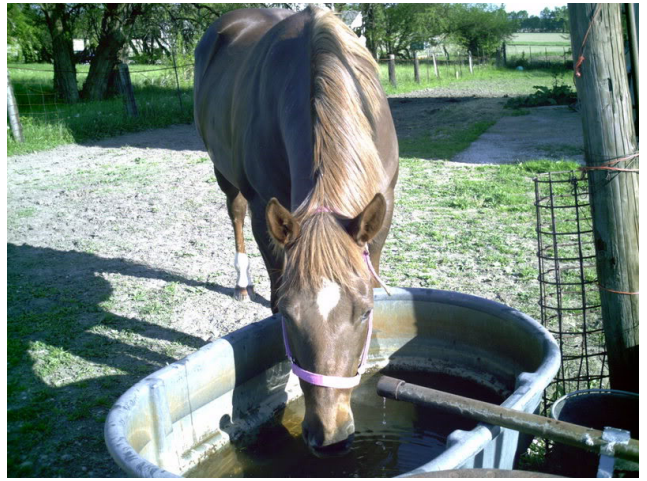
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Providing proper and adequate nutrition is a challenge all horse owners must face. Understanding your horse's nutritional needs is important, not only to optimize performance, but also to ensure your horse's safety. The following guidelines emphasize key points to keep in mind when determining how to meet your horse's nutritional requirements.

1. **Provide clean water daily.** A normal, healthy horse will consume approximately 5-15 gallons of water per day depending on temperature, humidity and activity level. If you do not provide free-choice water, then water your horse at least twice per day for several minutes until it is satisfied.
2. **Decide how much water to give a hot horse.** It is commonly believed that limiting the amount of water a hot horse consumes when cooling out to frequent sips rather than long gulps until its temperature, pulse and respiration begin to approach normal will prevent digestive and metabolic disturbances such as colic and laminitis. Recent research, however, has indicated that horses may actually suffer no detrimental effects from rehydrating quickly. This study also found that restricting water intake immediately following intense exercise did not cause horses to have lower total water intakes within 60 minutes post-exercise, as compared to horses allowed free-choice water intake ("Effect of varying initial drink volume on rehydration of horses," Butudom et al., *Physiology and Behavior*, Volume 79 Issue 2, July 2003, pp.135-142). Since opinions are still mixed on this subject, it is up to the owner to determine how cautious to be. (Normal resting values: temperature 99.5°F - 101.5°F, pulse 32-36 beats per minute, respiration 8-12 breaths per minute.)

3. **Encourage water intake on cold days.** Horses may not be inclined to drink enough water during cold weather, particularly if the water provided is icy. Reduced water intake makes the horse more susceptible to impactions and other forms of colic. You can encourage your horse to drink more water on extremely cold days by top dressing its feed with a small amount (e.g., 1-2 oz) of salt or providing water warmed to ambient temperature at least twice daily.
4. **Feed horses individually and observe their eating habits.** Knowing your horse's individual eating habits will assist in determining when it goes off its feed or may be having dental problems.
5. **Feed frequently.** The horse has a comparatively small stomach and naturally eats often. Feeding confined or partially confined horses at least twice a day improves their disposition, appearance and feed utilization efficiency. Frequent feedings also help prevent stall vices such as cribbing and weaving. When adding feedings, the same total amount of feed should be fed; it is just split into smaller portions. Limit meals of grain feeds to less than 0.5% of body weight each feeding. For example, if you have a 1,000-pound horse that requires 10 pounds of grain, feed it no more than 5 pounds twice a day. Horses that require large amounts of grain should be fed smaller amounts more frequently.
6. **Feed a minimum 1% of your horse's body weight in roughage.** Horses are adapted to eating forages (grasses and hays) due to a microbe-containing, hindgut adaptation called the cecum. A horse should be fed at least 1% – preferably 1.5%-2% – of its body weight in roughage (on a dry matter basis). Feeding too little roughage can lead to severe health conditions such as colic and ulcers. While some horses require no additional grain, others may require 1.5% or more of their body weight in grain supplements to maintain their weight, depending on metabolism, age and activity level. If forage alone is not meeting your horse's nutritional requirements, consider feeding a higher quality forage, adding grain to the forage diet, or replacing part of your horse's forage with grain. No matter what option you choose, your horse should always be fed a minimum of 1% of its body weight in forage.
7. **Feed quality forage, concentrate /grains and supplements.** Respiratory, digestive and nervous problems – even death – may result from feeding dusty, moldy, contaminated or spoiled feeds. Store feeds in a dry environment, and avoid rain and humidity as much as possible. Watch feeds closely during hot and humid summer months when they tend to spoil faster.



8. **Feed based on feed weight, not volume.** For example, pellets tend to be denser and have a greater weight per volume than sweet feed. Flakes of hay also differ in weight and volume. Knowing how much one scoop of grain or an average flake of your hay weighs can help you make appropriate adjustments in quantity when increasing the amount fed as well as when switching to a new product. Also, since nutrient requirements for horses are typically given based on weight (see #25), knowing how much your horse eats will be helpful for any calculations you may want to perform.



9. **Select feedstuffs based upon energy content, protein, fat and fiber.** Your horse's diet should be formulated based upon its requirements for these nutrients, and essential vitamins and minerals (see #25 for further information on specific requirements).
10. **Feed a high-quality ration.** The level of feed your horse requires will vary with its condition, activity level and age. Poorer-quality hays and grains are less digestible and therefore must be fed in higher amounts to achieve the same condition. Sometimes feeding cheaper feeds that are made from less digestible ingredients may actually cost more to maintain your horse than feeding a more expensive, higher-quality product.
11. **Make changes gradually when altering your horse's feeding program.** For example, when changing types of feed, begin by replacing a small amount of the previous feed with the new feed. Over the course of several days to two weeks, gradually replace more of the old feed with new feed until your horse is completely switched to the new feed. Giving your horse's GI tract microbes, which help digest certain feeds, a chance to gradually adapt to changes will help prevent digestive disturbances such as colic.
12. **Feed at approximately the same time each day.** This is especially important if you are your horse's only source of grain and forage (e.g., stabled horses). Many horses will become agitated if they are not fed when they think they should be fed, which often results in digestive disturbances.
13. **Provide free-choice loose salt-vitamin-mineral mix.** Horses are not efficient lickers; and since mineral blocks are generally less than 5% mineral and more than 95% salt, they do little to provide for your horse's vitamin/mineral requirements. Horses will consume 1 ½ - 3 oz. per day of a loose mix.
14. **Adequately cool-out worked, hot horses before feeding.** For best performance and to reduce potential metabolic problems, it is best to not work horses within a half hour after feeding a concentrate.
15. **Observe your horse's feces.** Note any changes in color, odor and consistency, as well as the presence of worms or excessive amounts of undigested grains, any of which can indicate metabolic, digestive, dental or dehydration issues.
16. **Exercise your horse.** Adequate exercise is essential for your horse's overall well-being and mental and physical health. If your horse is not in a riding/training program, be sure to provide several hours a day of pasture turnout.
17. **Reduce activity and feeding levels gradually.** Following intensive training, do not abruptly end your horse's exercise regime and feeding program. Make exercise and feeding changes gradually over a period of two weeks to a month, depending on previous activity level.
18. **Discourage rapid feed consumption (bolting).** Prevent choking and metabolic disorders by spreading feed out over a large area, or placing large, smooth rocks in the feed tub. (Note: Use baseball-sized rocks so your horse cannot inadvertently eat them.)
19. **Clean feed and water troughs.** Clean feed and water troughs, buckets, etc. as needed and make sure there is no standing water left in feed buckets. Feed that accumulates in wet buckets can decay and mold, potentially causing health hazards in horses that eat out of them.



20. **Avoid feeding improper amounts of vitamins and minerals.** Both excesses and deficiencies most commonly occur when feeding single grains, cutting formulated feeds with a grain, or feeding too many or improper supplements. You should be able to read a feed tag and understand if the feed meets your horse's requirements. (See #25 for more specific information on vitamin and mineral requirements.)
21. **Do not feed finely-ground grains.** Coarse grinding, cracking, rolling and crushing processes break down the seed coat, making most grains more digestible and increasing their palatability and feeding value by 5%-10%. However, the dust from feeding finely-ground feeds can cause respiratory problems in horses.
22. **Limit grain intake when your horse is idle.** Withhold one-half of the grain ration and increase hay on days when your working horse is idle. Some horses are prone to metabolic disorders that cause their muscles to "tie up." These problems can often be controlled by limiting grain intake on days when your working horse is confined to a stall with no exercise.
23. **Do not feed a hot, tired horse a full grain ration.** It is risky to feed an extremely hot, tired horse any grain until it has cooled off to resting heart rate and temperature. Even after it has cooled, if your horse has been previously worked to exhaustion, cut the grain into two feedings (the second given an hour after the first) to help prevent digestive disturbances and metabolic disorders.
24. **Calculate your horse's nutritional requirements.** The National Research Council (NRC) lists approximate nutrient requirements for horses based on age, weight, workload and status and provides a useful resource to determine if a particular diet meets your horse's needs. The Web site (<http://nrc88.nas.edu/nrh/>) allows you to select the age, weight, status and workload of a particular horse (under "Animal Specifications") and determine its specific nutritional needs for macronutrients (given in the table at bottom of web page) as well as vitamin and mineral needs (under "Other Nutrients"). This program also allows you to select certain forages and other feedstuffs (under "Dietary Supply" — click on "New" to change feedstuff) to determine how much of your horse's requirements are being met by that particular feed or combination of feeds (you must input the weight of each feedstuff being consumed).
25. **Get more information.** Most feed companies have nutritional representatives and consultants who are available to answer any questions or concerns you might have regarding your horse's feeding program. For more information you can contact your local county Extension agent at 1-800-ASK-UGA1.

Most of the photos in this publication are from <http://photobucket.com>



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