

Feeding

WHEN YOU SPEND TIME AROUND HORSES AND realize just how many bizarre ways they can find to injure themselves, you understand why basic safety is so important. A horse scratching his head will find the one protruding nail in a stall and try to rip his eyelid off with it; another one drinking from a trough will get his foot tangled in the hose coiled around the adjacent hydrant and pull hose, hydrant, and hide up and off trying to extricate himself.

What might not be quite so readily apparent are the many pitfalls of the equine digestive system. Two of the most dangerous maladies that can afflict horses—colic and laminitis (also known as founder)—are often directly related to what the horse eats and the equine digestive tract.

A nutritious and balanced diet is just as important for horses as it is for humans. A horse who is fed well (meaning quality, not just quantity) will seem to glow from the inside underneath his blindingly shiny and dappled coat. Not only will he look good, but he will also approach his work with energy and enthusiasm, filling his devoted human partner with well-deserved pride.

Entire books have been written on feeding the horse, and we're not going to try to explain everything there is to know here. We do give you enough of an overview in the hope that it will motivate you to delve into one of those books later on—or at least call your county agriculture extension office for some free pamphlets on the subject.

The Rules of Feeding

The very first time you went near a horse, you probably started hearing The Rules. Don't walk behind a horse—and don't run anywhere, ever. Always feed treats on your flat palm with fingers outstretched. When riding, the Rules include Heels down! Eyes up! Then there are the Rules that don't serve much purpose but are followed anyway, such as leading and mounting a horse from the left side.

The rules of feeding are the big ones, the iron-clad tenets of the horse world, taught to little Pony Clubbers and 4-Hers who aren't even big enough to lift a bale of hay. You don't need to memorize every twist and turn of the horse's hundred-foot-long digestive tract, you just need to remember the simple rules, and you'll have a good foundation upon which to build.

Rule #1: Grain: Feed Little and Often

In chapter 3 we discussed the fact that the horse is a grazing animal, and his digestive system is designed for a near-constant intake of low-calorie

food throughout the day. Horses who spend much of their time in stalls aren't doing much grazing, but their natural feeding patterns can be replicated by keeping hay in front of them for a good portion of the day. They can nibble at it for a while, take a break and snooze for a while, and then come back to it. This not only gives horses something to do, preventing them from becoming bored and developing stable vices if stalled for extended periods, but it also keeps some roughage constantly moving through their systems.

If grain is fed, it should be given in multiple smaller meals rather than one large one. Most horses are grained twice a day for the convenience of human caretakers, but if a large quantity must be fed for whatever reason, an additional lunchtime feeding might be in order, to avoid feeding too much grain at once and to provide stalled horses with a nice mid-day activity.

Small, frequent meals not only are more natural for the horse, but they also allow the horse to better digest and use his food. When too much food is fed at once, it's rushed through the system and not digested as effectively as when it moves through at its customary slow pace.

Rule #2: Feed Plenty of Roughage

A corollary to the above, this rule emphasizes the importance of roughage—grass and/or hay—over grain. Roughage is what the horse is meant to eat, and his digestive system is geared toward using the nutrition in those grassy stalks. A horse should eat 1.5 to 2 percent of his body weight in roughage every day. (The one exception is the founder-prone horse, for whom fresh grass and rich hay varieties can be a problem.)

Many horse owners tend to focus much more intently on the grain portion of the diet. Grain is sold by brand-name and is often supported by national ad campaigns; it comes in a spiffy bag with a picture of a beautiful, well-fed horse on the front and a long list of ingredients on the back. Hay, by comparison, is just...hay. It comes in bales from the farmer down the road. No slogans or marketing promises—just cured grass.

But in reality, good old hay should be the mainstay of the diet. Many pleasure and trail horses don't even *need* grain: good-quality hay and/or pasture is plenty. If hay isn't enough, grain can be added, but the bulk of a horse's calories should always come from roughage.

Rule #3: Feed According to the Horse's Needs

Each horse is an individual and has different needs, in the same way that two people of the same size can have vastly different caloric needs.

A starting point for deciding how much any given horse should be fed is his size; a twelve-hand pony obviously does not need to consume as many calories as an eighteen-hand draft horse. The other major factor is the amount of work a horse does—a horse who works hard requires more calories than does a pasture puff.

In keeping with the “feed lots of roughage” rule, you should begin designing your ration around the amount of hay or pasture your horse gets. Horses who are grazing on good pasture the majority of the day don't need much hay, if any, since they've already got bellies full of grass. Horses who don't get much turnout or are not on good pasture will need more hay, whether they are inside or out. If a horse finishes all the hay you give him and looks for more, you can add another flake or two, as long as he doesn't get too pudgy. If the horse is trampling his leftover hay (or, to add insult to injury, using it as his toilet) or if he's getting fat, you can cut his ration back. (You know you've hit the ideal balance when the trim horse is cleaning up his hay at every meal but not obsessively looking for more. If you have concerns, a weight tape will help you estimate your horse's weight from week to week.)

Most horses who are in work get at least some grain, and some horses who are “hard keepers” (i.e., on the skinny side) need grain regardless of their work program, just to keep their weight at a healthy level. Less is always more when it comes to grain, so start with the minimum (either the ration he was on before coming to your barn, if you know what that was, or what a veterinarian or competent barn manager recommends) and adjust it upward if necessary. (The quantity guidelines printed on

bags of horse feed are based on protein content and “average”-size horses. They don’t apply to individuals and can be hard for nutrition newbies to figure out without guidance.)

With a little bit of tweaking, you’ll find the right balance of pasture, hay, and grain for your particular horse’s needs. But you’re not done—your horse’s ration should always be considered a work in progress, not a finished masterpiece. It should change anytime your horse’s workload or the quality of your feed changes.

For example, in many parts of the country, pasture is poor to nonexistent in wintertime or during months of drought, so supplementing pasture with hay is in order. In the spring, the grass comes in thick and lush, and hay rations can be cut back or eliminated completely, depending on how much pasture is available. Whenever good-quality hay is left uneaten (by one horse or the whole herd) from one feeding to the next, quantities can be reduced slowly.

If a horse in hard work (five to six days a week of strenuous riding, driving, or training) develops a hoof abscess and needs a few days of stall rest while it drains, you should cut his grain back temporarily, because he won’t need those extra calories.

Rule #4: Change Feed and Feed Schedules Gradually

Whenever you make a change to your horse’s ration, whether it’s increasing or decreasing the amount or changing to a new kind of feed, you should make the change incrementally. Sudden differences in the amount or type of feed can lead to colic or founder.

If you’re changing the amount of feed, increase or decrease each meal a little at a time, over several weeks, if possible, until you reach the desired amount. (Even a starving horse can metabolize feed only so efficiently and, if confronted with a sudden, large influx of calories, can be made ill, or worse.) One method for changing a ration (or type of feed, as opposed to the *amount* of feed) is to replace 25 percent of the ration with the new ration every two days so that it takes six days before the horse is eating 100 percent of the new ration⁴⁵.

Rule #5: Measure Feed Accurately and Feed Consistently

Ask someone how much feed his horse receives, and you usually get an answer measured in flakes of hay and scoops of grain. While this is a convenient way to measure feed in the barn, it's best to start off knowing what your horse's baseline nutritional needs are, based on weight.

When you first acquire your horse, the previous owner will tell you what feed she's been eating, and how much. He may tell you she gets two cups, two quarts, two scoops—but scoops and other measuring vessels are not all the same. You should start off by measuring your horse's feed by weight. You can buy a simple kitchen or postal scale, or you can weigh your horse's portion on the scale at your local feed store. Once you figure out how much your horse's typical ration weighs, you can measure that portion at feeding time using a scoop, coffee can, or whatever suits your needs.

If you later decide to switch to a different kind of grain that has more or less volume per pound, but with the same nutritional content, you'll know approximately how much you need to feed *by weight* to get the same amount you were feeding with the old grain.

The average thousand-pound horse who relies on hay for all his forage (say, in winter, when pastures are dormant) typically eats fifteen to twenty pounds of hay per day. Most of us dispense hay in flakes; however, the amount of hay in a flake can vary greatly, depending on the size of the flake and the kind of hay. If you don't know how much the bales of hay you are feeding weigh, you can use a bathroom scale to check, then feed that portion of a bale that your horse needs, every day. The goal is to feed your horse enough hay to keep him at his ideal weight and provide him forage throughout the day without waste. If he's looking (or sounding) ravenous at feeding time or is using uneaten hay as his toilet, adjust his hay ration accordingly.

Rule #6: Don't Feed Immediately Before or After Exercise

Think about tucking in for a hearty meal, and when you're finished, pushing back from the table and going straight out for a three-mile

jog. How well would that sit with *your* digestive system? Alternatively, think about how you feel immediately after strenuous exercise. Are you interested in eating right away, before you've even stopped gasping for breath? No? Well, it's no different for your horse.

Ideally, you should wait an hour or so after your horse has finished a meal before riding him. If you're going to do something really strenuous, it should be closer to three hours. (Most event horses, for example, do not get fed any breakfast before they run cross-country.)

Having the digestive system full of food gives the horse's lungs less room to work, and makes strenuous exercise harder on him. In addition, blood flow is diverted away from the digestive organs during periods of exertion, so gut movement slows and colic may be a real danger.

If you must work your horse around mealtime, feed perhaps a third of his usual portion beforehand (you can save the rest for after your ride), particularly if all the other horses in the barn are tucking into their meals, and don't work him very hard.

You also need to exercise caution when feeding a horse after work. Let the horse cool down completely—his breathing rate should be back to normal, and his skin should not feel hot or sweaty.

Conventional horsey wisdom used to dictate that a horse should not be allowed to drink large quantities of water after hard exercise. Small sips of water were allowed, but allowing a hot and thirsty horse to drain a bucket was a *big* no-no. However, considerable research was done on cooling horses out after exercise in preparation for the 1996 Olympic Games in hot and humid Atlanta. Studies showed that a horse's thirst reflex is highest just after exercise—allowing him to drink his fill of cool (not ice-cold) water helps speed the cooling process, rehydrates the horse, and has no adverse effects⁴⁶.

Rule #7: Routine, Routine, Routine

Horses thrive on routine, and their amazingly accurate internal clocks make them much better timekeepers than their human caretakers. Many

a horse owner has been distracted by work around the barn only to be reminded by her stalled charges rattling their buckets because dinner is five minutes late!

Horses should be kept on a consistent feeding schedule, with meals arriving at the same time each day (ideally, within an hour). Most horses aren't harmed by an abrupt change in schedule, although stalled horses, in particular, will certainly be very annoyed. But for horses who are prone to colic, a sudden change in routine can be more than an annoyance and might be enough to trigger a colic episode.

Assessing a Horse's Needs

There's no magic formula to assist you in deciding how much to feed, although you or your barn manager can take a guess to start with, based on what you know about the horse or on what horses of similar size and workload need to maintain their condition in your management program. It's basically a system of trial and error, with adjustments based on the horse's actual condition and energy level.

To be able to assess what changes should be made in a horse's diet, you need to be able to assess the horse himself to determine if he needs more or fewer calories.

In 1983 veterinarian Donald Henneke developed an equine body scoring system to be able to better quantify what is, in essence, a subjective judgment: is a horse too fat or too thin? The system divides the horse's body into six parts: the neck, withers, shoulder area, ribs, loins, and tail head area. Each of these parts are scored on a scale from one to nine, according to certain specified criteria, then the scores are averaged for an overall body condition score. A horse who scores a one is emaciated, while one who scores a nine is considered obese.

Henneke Horse Condition Scoring System

- 1—Poor
- 2—Very Thin
- 3—Thin
- 4—Moderately Thin
- 5—Moderate
- 6—Moderate to Fleshy
- 7—Fleshy
- 8—Fat
- 9—Extremely Fat



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This Arabian came as a starvation case to a California humane organization: the horse's condition was rated a 1 (emaciated/poor) (Photo A); after recovery months later, the horse was rated a 6 (Photo B).

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The Henneke system is now widely used by law enforcement agencies to determine more easily when horses are not being cared for properly, but it's a useful tool for the average horse owner as well. Using it teaches you to assess small changes in your horse's condition more objectively and to look at the overall picture, rather than just the size of your horse's belly.

Although a five on the Henneke scale is ideal, a range of body conditions is considered normal. Like humans, horses are all built differently—some are very slight and naturally tend to be thin, while others are of a more stout construction.

A horse's "ideal" weight also depends on his job. A Thoroughbred who is racing fit is expected to be on the lean side, with a pronounced "tucked up" look, like a greyhound. In contrast, a show hunter or western pleasure horse is expected to be almost a bit plump, with a well-fed, rounded appearance.

Individual horses can vary widely in their ability to put on and maintain weight. An "easy keeper" usually tends to be on the fleshy side, and his owner is constantly fighting to keep his weight in check. These horses easily maintain their weight on hay and pasture, and might even need to have their access to pasture restricted when the grass is very lush.

A "hard keeper," on the other hand, loses weight very easily and has a difficult time putting it back on. He may be a finicky eater, easily distracted from finishing his meal, or without much of an appetite at all. Any kind of stress—a trailer trip, a slight illness, or a cold winter—might cause him to lose weight. Such a horse can go from being just a bit thin to dangerously underweight. Hard keepers often need grain, since grain is a much more highly concentrated source of calories than is hay. Their owners must be especially vigilant, keeping an eye out for the slightest drop in weight so the trend can be reversed quickly.

Many older horses become hard keepers, even if they had no problem maintaining weight in their youth. Their teeth may have worn down considerably as they've aged, making it more difficult to chew food, or their bodies are no longer as efficient at using the food they *do* eat. These horses might do better on pelleted feeds that can be wetted down for feeding,



HOOF CARE AND LAMENESS

Roughage—grass or hay (here being loaded into a loft via a hay elevator)—is key to a horse's diet.

making an easy-to-chew mash. There are also special feeds formulated just for senior horses that may help older equines stay at a good weight.

It's important to assess your horse's weight regularly. Small, incremental changes over time might go unnoticed, so be cognizant of telltale signs, like needing to tighten or loosen the saddle girth. Many pastured horses lose weight over a cold winter, since they use calories to stay warm. Weight loss can be hidden under a heavy hair coat and revealed only after the shedding season arrives with warm weather. It's much easier to correct the problem if you catch it early.

Hay

Hay is the portion of the diet that most horse owners know the least about. At boarding facilities usually only one type of hay is offered, and the owner's only input is how much of it the horse receives. If you don't stable your horse at home and have never purchased hay yourself, your knowledge is probably minimal. Even if you don't buy your own hay, you should be aware of what your horse is eating, what constitutes good hay, and what the basic hay varieties are.

There are two main varieties of hay, grasses and legumes. Grass hays include timothy, coastal Bermuda, brome, and orchard grass. Different varieties grow better in different parts of the country, so “grass hay” in Pennsylvania might mean timothy, while in Texas it might mean coastal Bermuda grass. Grass hays are high in fiber and relatively low in nutrient content, which makes them very safe to feed free-choice. The primary legume hay fed to horses is alfalfa, which has a higher protein content than grass hay and less fiber, making it a much richer hay. It’s also highly palatable, and most horses enjoy it immensely. But because it’s so much richer than grass hay, it must be fed in smaller quantities. It is possible to overfeed alfalfa hay; unlike grass, it is not usually fed free-choice. Clover, another legume, is often found mixed with orchard grass or timothy and is also highly palatable.

You can often purchase a grass/alfalfa mixed hay, which has some of both. (The two different kinds of hay are planted as a mixture in the same field and harvested together.) Mixed hay has the benefit of extra nutrition from the alfalfa but contains enough grass that it can be fed in larger quantities.

Making hay is as much art as it is science. The goal is to cut it at just the right time, maximizing the nutritional content, which rises as the grass grows and then starts to drop off at a certain point. Cut hay dries (or “cures”) in the field for several days and is then baled. A hayfield is cut several times in the course of a growing season; each harvest is referred to as a cutting.

Hay is greatly affected by the weather, both as it grows and after it is cut. In drought conditions hay doesn’t grow so well, and the final product is very stemmy with a low nutritional content. Once hay has been cut and is drying in the field, weather can wreak havoc with the process. Cut hay that has been rained on takes longer to dry completely. If the hay’s moisture content is too high when it is baled, it can develop mold or can ferment and produce enough heat to cause spontaneous combustion.

Most of the intricacies of making hay are beyond the realm of knowledge of the average horse owner, so having a good, knowledgeable hay dealer is critically important. Reputable hay growers produce a consistently good product that they stand behind, and you can count on them



BIGSTOCKPHOTO / MARILYN BARBONE

Although the square bales seen on page 179 are more common, round bales of grass or timothy hay are a good solution for horses on acreage with insufficient pasture. Typically more hay is wasted in a round bale than in a square bale, even when bales are placed in bale holders, because horses pull hay out from the inside of the bale as they eat.

to provide quality hay year after year. Unfortunately, though, everyone is subject to the vagaries of the weather. In drought years, even the best hay growers struggle to produce good hay.

Some hay brokers may try to sell an inferior product. Every horse owner should be educated in what differentiates a good bale of hay from a bad one, to be able to assess hay before buying it, and to be able to tell when bales in your own hayloft have become unsafe to feed.

A good hay looks appealing. It's green; soft, not stemmy, to the touch; and contains a high proportion of leaves and plant heads. It smells fresh, not musty. There's no evidence of bugs, debris, or mold. When you break a bale open and pull it apart, there should be minimal or no dust. In contrast, poor hay looks dried out and dull—more brown than green. It feels coarse in your hands, with lots of sharp stems, and it does not smell fragrant and appealing.

Brown, stemmy hay won't hurt your horse (although he might decline to eat it, leading to waste), but it is very low in nutritional value. Dusty hay, however, can cause respiratory problems in horses and should not be fed;



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A good, fresh grass hay (left) has plant heads without stemmy weeds, field debris, or bugs. Moldy hay (right) contains patchy gray “turned” areas and has an unappealing odor.

if you have no choice but to feed hay that’s dustier than you would like, you can soak it in clean water before feeding it to prevent your horse from inhaling the dust. Soaked hay must be fed immediately, though, because it can mold if allowed to sit.

The quality of hay can vary bale to bale, especially if certain bales are exposed to the weather when hay is stored, if it is stacked outside and kept under a tarp, for instance. The weathered bales are not of as high a quality as those inside the stack and probably should be discarded. Any bale that is discovered to have mold in it should be thrown out immediately in its entirety. Moldy hay should never be offered as feed, used as bedding, or placed on a manure pile where horses might attempt to consume it, as mold can cause severe illness in horses. It’s wise to develop a habit of quickly evaluating every newly opened bale of hay to be sure it’s of good quality, as a bad bale can pop up in even the best loads. Contact your hay dealer if you find bad bales, since some, particularly local suppliers, offer credit for any bad bales they may have produced despite their best efforts at quality control.

Hay can also be fed in pelleted or cube form, available from commercial mills through your feed supplier.



A portable feed bunk provides a trough for feed and offers hay at nose level (although ground feeding hay more closely approximates the horse's natural feeding posture and lessens the possibility of eye injuries caused by hay stalks at eye level).

Grain

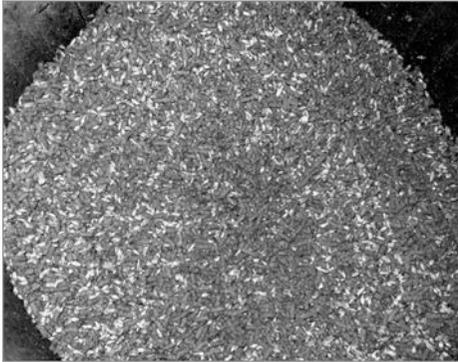
Many recreational horses do not need grain; their energy requirements are low, and as long as they're easy keepers, they usually do just fine on hay and pasture. Horses who are in hard work, however, need the extra calorie boost that comes from grain, as do horses who are hard keepers and have trouble maintaining their weight.

According to a 2005 study by the U.S. Department of Agriculture, more than 90 percent of equine operations feed grain.⁴⁷

Grain is available from most feed dealers in two forms—whole grains (oats, corn, etc.) bought by the pound and bagged, processed, branded varieties from commercial mills (sweet feed, pellets, etc.). If your horse is at a boarding barn, the barn manager most likely offers one or two choices (although many are willing to feed something else if you provide it), which makes your decision easier. But if you're purchasing grain on your own, where do you begin?

Let's start with two of the most common kinds of prepared feeds, textured (or "sweet") feeds and pelleted feeds.

Sweet feed is so called because molasses has been added to make the grain more palatable and to bind mixtures of grains together. Sweet feed



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A commercial sweet feed (left) may include corn, oats, molasses, and pelleted feed and typically is available in a variety of protein content formulations for horses of different ages and activity levels. Pelleted feeds (right) (stored here in a clean, rodent-proof container) are a mixture of food stuffs processed into uniform pellets.

usually consists of a mixture of various grains (oats, corn, and barley are common); molasses; and added vitamins, minerals, and protein (usually in the form of pellets). You can easily see the various whole or crushed grains in a handful of sweet feed.

Sweet feed is an excellent choice for picky eaters and for owners who need to mix less-palatable medication or nutritional supplements into their horses' grain. The slightly sticky texture of sweet feed prevents powdered additives from sifting through the grain, and its sweet taste masks medicinal odors. Sweet feeds offer consistent quality, since they are produced to adhere to certain nutritional standards, and they're widely available in bagged form from any feed dealer. Molasses (which can cause excess edginess in horses prone to hyperactivity) can cause sweet feed to spoil easily in hot, humid weather, so it's best to purchase this feed in a quantity that can be used relatively quickly or to store it in a climate-controlled environment.⁴⁸

Pelleted feeds are a mixture of grains, vitamins, minerals, and protein finely ground and processed into uniform pellets. (A different variation of this process produces extruded feeds, which consist of larger, less-dense pellets.) Pelleted feeds have a low moisture content, so they can be stored for a relatively long time. They can also be soaked in water to make an easy-to-eat mash for horses who are prone to choke or for older horses with poor teeth.

Like sweet feed, pellets are commercially available in bags. Most horses eat pellets well, but some finicky eaters may not like them as well as sweet feeds. Any powdered supplements added to pellets often end up left at the bottom of the bucket. This problem can be solved by adding a spoonful or two of bottled molasses, as needed.

Some varieties of pellets are marketed as “complete feeds.” They contain a high percentage of fiber and can serve as the horse’s entire diet; no hay is required. They’re useful for older horses whose teeth might be in poor condition and who have trouble chewing hay or grass and can even be fed as a soaked mush if necessary. They’re also often fed to horses with respiratory ailments that are exacerbated by the dust in hay. In locales where hay is scarce or where it varies widely in cost or quality, complete feeds may be a good option.

Both pellets and sweet feeds are carefully balanced to include all the vitamins and trace minerals horses require, so unless your horse has special needs, you can be reasonably sure all of his nutritional needs are met. Both have nutritional labels that tell you the ingredients and the percentages of various nutrients, usually as a maximum or minimum percentage. The ingredient list is not as detailed as it is on human food because the contents may vary slightly from batch to batch, and because many feed manufacturers want to keep their exact formulations secret from competitors.

Many horse owners feed unadulterated grains, like whole or crimped oats and cracked or rolled corn, either on their own or in conjunction with other feeds. These may be milled locally. The quality of these grains can vary more widely than among prepared feeds, and they do not contain



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Beet pulp, a by-product of the sugar beet industry, can be purchased in sweetened or plain varieties and is a popular horse feed.

added vitamins or minerals to ensure a balanced diet, so you may have to supplement these on your own.

Selecting a feed for your horse depends on many factors, including the amount of work your horse receives, his age, and any specific nutritive requirements. Specific guidance on determining the feed that's right for you is beyond the scope of this book. Your veterinarian can give you some general guidance, however, and feed companies have nutritionists on staff who can help you determine which of *their* feeds is best suited for your horse. (Of course, in addition to providing customer service, they have a vested interest in convincing you that their feeds are better than the others on the market.)

In general, you want to select feed that meets or slightly exceeds all of your horse's requirements and that your particular horse finds palatable. You want to choose a feed from a reputable company—national or local—that uses high-quality ingredients and processes feed in an environment where it can't be contaminated, and you want to purchase the feed you use from a dealer who has a constant fresh supply (feed loses nutrition as it ages), carefully stored where it won't be subjected to excessive heat or moisture or exposed to rodents.

In addition to reading the label, you should visually inspect the grain product (although this is more productive with unprocessed grains and sweet feed than it is with pellets). Are the kernels plump and mature? Does there seem to be an excess of unidentifiable “filler”? Do whole grains like oats or corn seem stale and dusty? Once you’ve decided on a feed type or brand, check the quality of any new bag you open and dump into your feed bin. If old or improperly stored, grain can be infested with insects or become moldy. Immediately discard/return any bag of feed you open that is “buggy” with weevils, moldy, or smells “off.”

One age-old horseman’s practice is feeding bran mashes, either as occasional treats or for digestive health. Wheat bran is not nutrient-dense, so the small amounts usually fed to horses do not add much nutritional content, but feeding mashes is thought to increase gut motility (activity), although there’s disagreement over how much value, if any, bran mashes have in that regard. Wheat bran is also very high in phosphorus, and because the ratio of calcium to phosphorus must be kept around 2:1, you might need to add additional calcium to your horse’s diet if you feed him bran. Bran mashes are probably not a necessary part of a horse’s diet, but they are a nice occasional treat on cold winter mornings, or a good method of providing hydration to a horse who might not be drinking enough water on his own.

Rice bran has a very high fat content and is often fed as a supplement for hard keepers, or as an alternative to grains for horses who can’t tolerate high levels of starch. If you choose to feed rice bran, be sure to purchase only the stabilized variety—unstabilized rice bran becomes rancid very quickly.

While grass hay (not legume hay) can usually be fed to horses in large quantities without any adverse effects (other than the horse getting too fat), feeding too much grain *can* be detrimental. An overgrained horse may be hyperactive because of all those excess calories. Extremely high grain intake—usually the result of a horse getting into the feed room’s grain bin and gorging himself—can be extremely dangerous because it can lead to bouts of colic or laminitis (see chapter 10).

Grain should always be stored in horse-proof containers, preferably behind a closed and locked door in a feed room or spare stall. Grain

should also be protected from rodents or hungry wildlife (like raccoons), for sanitary reasons and to prevent your barn from becoming attractive to disease-carrying or otherwise undesirable critters.

Pasture

Chapter 8 discussed the importance of turnout for a horse's well-being. Unfortunately, however, turnout time doesn't always equal grazing time.

In densely populated areas near major cities, turnout might only be available in small paddocks or pastures that are quickly overgrazed. In other parts of the country, lush grass simply doesn't grow, and turnout is primarily for exercise, not grazing.

When it's available, though, pasture grazing is exactly how Nature intended horses to eat—fresh, green grass, nibbled at throughout the day as the horse ambles around. It's a perfect food source for horses, when properly managed and maintained. It doesn't require delivery or storage, and other than the cost of periodic seeding and fertilizing, it's free!

If your horse is fortunate enough to be able to consume a significant portion of his diet in fresh forage, your pastures aren't "just grass": they're an important part of your feeding program and should be treated as such. A well-maintained pasture should be soil-tested every few years to determine what nutrients are lacking or overabundant. Good pasture requires periodic seeding, fertilizing, and weed control. Your local cooperative extension agent can provide valuable information on managing pastures in your particular location, including seeding and fertilizing recommendations.

Much of pasture management isn't made up of soil testing or expert advice, however—just care. Most important is to avoid overgrazing. If pastures don't have enough grass to accommodate your herd grazing 24/7, the horses should only be turned out on them for part of the day and should have their diets supplemented with hay. If you have ample pasture land, you can rotate horses throughout various pastures, letting them graze one while another is resting (allowing the grass to grow

and the manure to dry out and be absorbed into the soil). You can also divide one large pasture into sections with temporary electric fencing, and rotate horses through the sections, since horses graze small areas more effectively than large ones.

Although grass is a horse's natural diet, too much of a good thing can cause problems. A horse unaccustomed to eating grass can easily founder if allowed too much time on lush pasture (see chapter 10). As with all dietary changes, introduction to pasture should be done gradually. Allow a horse to start with limited turnout—as little as fifteen minutes a day if the grass is especially lush. Make incremental increases until the horse has acclimated and can be on a regular turnout schedule. Note any signs of inflammation in the feet (ask your equine practitioner to show you how to use hoof testers to check for tenderness).

Any horse can founder, but ponies are especially prone to foundering on grass, and overweight animals are also at greater risk. A horse that has foundered once is at increased risk of foundering again, so extreme care should be taken when allowing these horses out on grass. You might want to limit pasture turnout to a few hours a day or put a grazing muzzle on a horse, which restricts the amount of grass he can eat. Some horses have medical issues, such as insulin resistance or Cushing's syndrome, that make them very sensitive to the sugars in grass.

Most pastures grow more than grass, including trees, weeds (such as ragweed and thistle), and invasive plants as well. Many varieties of plants are poisonous to horses, and if you manage your own pasture, you need to become familiar with the ones common to your area so you can eradicate them. Your local cooperative extension office should be able to provide some information specific to your locale, but you can also find plenty of books and websites with detailed photographs and descriptions.

If grass is adequate, most horses leave harmful plants alone, but when pastures are overgrazed and horses are looking for anything green to eat, they're much more likely to consume something dangerous.

A Last Word

While concentrates (grains) can make up for digestible caloric deficiencies in low-quality roughage (hay), they cannot make up for the digestive and psychological benefits of roughage. There is a growing body of evidence to show that colic, including the more severe types of displacements, is less common in horses whose main caloric intake comes from natural pasture or good, long-stemmed hay. Roughage also benefits horses' dental health. While processed feeds (pellets and grain mixes) can be more convenient for the owner, they do not mimic normal feeding behavior, in which horses spend a significant amount of their time eating followed by rest or exercise, then more eating. When horses are deprived of normal feeding behavior, they are more likely to develop disorders such as cribbing, wood chewing, stall walking, and sand eating. These obsessive/compulsive behaviors are not good for the horse's health and are a common reason for horses becoming "unwanted." Mimicking natural feeding behavior by having horses on pasture or feeding at least three times a day is a good idea.