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# CARE AND MANAGEMENT OF THE HORSE

# BASIC HANDLING AND SAFETY

**Horsemanship** is the art of riding and handling a horse. **Equitation** is a refinement of riding techniques. The mark of a skilled rider is the ability to get desired results with the least effort and minimum resistance from the horse.

Horsemanship and good horse training are closely linked. The way a horse performs is a combined result of the skill of the rider and the quality of training the horse has received. A beginning rider cannot do much even with a well-trained horse; a skilled rider does not expect much from a green horse.

To overcome their fears, horses need slow, thoughtful training methods that take their natural instincts into account. We want to teach the horse to trust and not to refer back to its natural defense mechanisms.

To communicate and work effectively with horses, a person must stay calm and centered. This creates an atmosphere in which the horse can relax, trust, and learn.

Though horses are normally quiet and gentle, they can become excited and react violently if they are frightened or mistreated. If you follow simple safety rules, you can avoid undoing hours of careful training or a serious mishap. Carelessness is the leading cause of accidents and can cause serious injury to the handler, rider, horse, or others.

Knowledge of safe riding and handling is important to basic horsemanship. A gentle voice, slow easy movements, and a calm attitude reduce the horse's fear and excitement.

## HEADGEAR AND BOOTS

The most common riding-related injuries are to the head. Many of these could be prevented or made less severe by wearing protective headgear when riding or working around horses. 4-H rules require that members wear helmets any time they are riding or driving an equine, but it is recommended that you wear a helmet whenever you are working around horses.

Protective headgear must meet American Society for Testing Materials (ASTM) standards and be certified by the Safety Equipment Institute (SEI). Be sure your headgear fits properly and is fastened correctly.

When riding, wear boots with proper heels that prevent your feet from slipping through the stirrups. There should be a ½-inch clearance between the side of the stirrup and your boot.

Always wear hard-soled shoes when working around horses.

## HANDLING

Always get to know the horse you are working with. Know its temperament and the way it reacts. Recognize the horse's peculiarities. If someone else is handling your horse, tell them what to expect.

Work on the horse from a position as near the shoulder as possible. See "Grooming" (page 69) for more safety guidelines.

Punish the horse only at the instant it misbehaves. Even a minute later the horse will not understand why it's being punished. Never strike the horse on the head or between the ears.

Avoid letting your horse kick or be kicked by keeping enough space between horses when tying, standing, or riding.

## CATCHING OR APPROACHING

Whenever possible, approach the horse at an angle and come in near its shoulder. Speak to it as you are walking up. Most horses are likely to jump or kick when startled and should never be approached from the rear. If it is necessary to approach from the rear, always speak to the horse before approaching or touching it. Speak to the horse first, then stroke it on the rump, and move calmly to the head. Stay close to the horse's body to reduce the impact if it kicks.

Pet a horse by placing your hand on the horse's shoulder and neck. Don't reach directly for the horse's nose. Their nose is in their blind spot, so this is annoying to the horse. When walking around horses, stay out of kicking range and do not walk under the tie rope. If you need to go behind the horse, stay close, putting your hand on its rump while speaking softly, moving closely around the horse's tail.

When catching a horse in a large corral or pasture, move slowly, keeping the halter and rope out of sight. Watch out for other horses in the pasture that might be aggressive. Do not chase the horse, but patiently walk it down by

following it. Do not use grain to catch a horse when other horses are present.

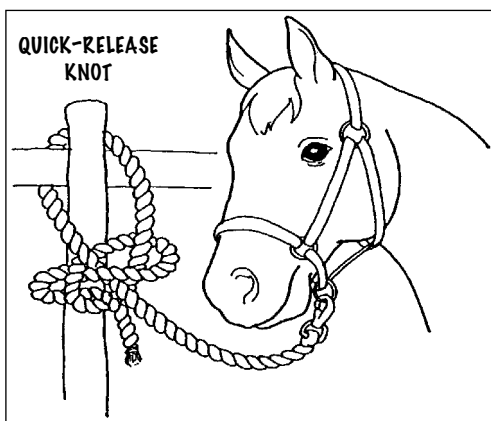
Quietly slip the halter over the horse's neck and head, being careful to keep your fingers out of rings, snaps, and loops. Be sure excess lead rope does not become entangled with your feet or hands.

## LEADING

Walk beside a horse when leading it, not ahead or behind, and always turn the horse away from you. A position even with the horse's head or halfway between the horse's head and its shoulder is considered the safest.

Never wrap a lead strap, halter shank, or reins around any part of your body. Use two hands to lead a horse. If the horse rears up, release the hand nearest to the halter so you can stay on the ground and not have your shoulder or hand injured.

It is customary to lead the horse from its left (**near side**), using the right hand to hold the lead, near the halter. The excess of the lead should be folded in a figure eight and held in the left hand. When leading, extend your right elbow slightly toward the horse so if the horse makes contact with you, its shoulder will hit your elbow first and move away from you.



Be careful when leading a horse through a narrow opening, such as a door. Be certain you have firm control and step through first. Step quickly and to one side to avoid being crowded.

When dismounted and leading the horse, be sure the stirrup irons on an English saddle are run up, and be cautious of the stirrups on a Western saddle, which can catch on objects. If leading a harnessed horse, watch for dangling straps or reins that might become detached and tangled.

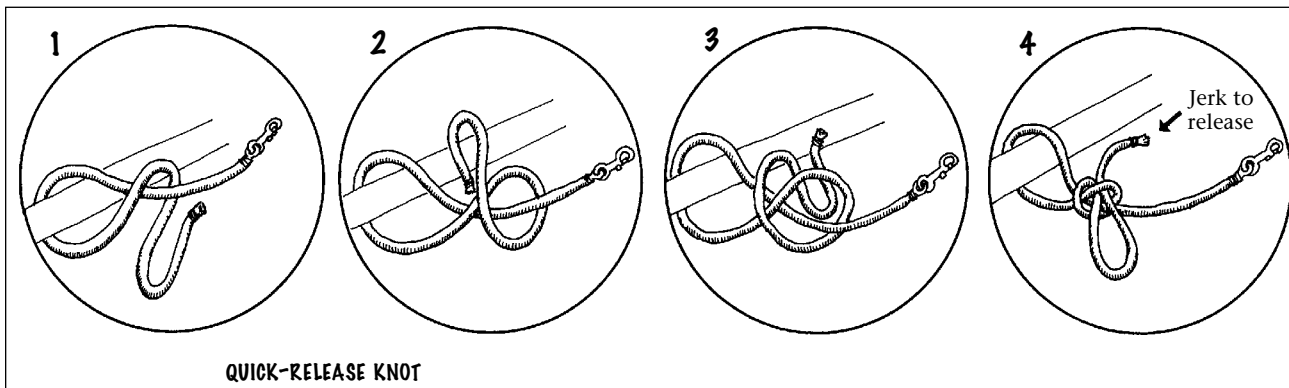
Use judgment when turning a horse loose, and make it stand quietly before taking the halter off. Turn the horse to face you and quietly remove the halter. Avoid letting the horse bolt away from you when released, by first dropping the noseband while keeping control with the halter or rope around the neck. Giving it a treat when released also teaches a horse to wait quietly. Stand back to reduce the chance of being kicked if the horse does take off.

## TYING

Always think of safety. If the horse pulls back, can it break or move the object it is tied to, causing it more fright? Can the animal be released quickly in an emergency? Could it become tangled in brush, wire, boards, or other hazards?

Know and use the proper knots for tying a horse. There are two basic knots every horseman should know. Use the **quick-release slip knot** whenever you tie a horse with the lead rope. This knot allows you to release the horse quickly if it gets into trouble. Use the **bowline knot** when tying a rope around the horse's neck. This loop will not tighten up, and the knot will not slip. Never use a slip knot around the horse's neck.

Tie the horse with about 3 feet (or the horse's neck length) of rope between the post and the halter. Tie no lower than the horse's withers, and always untie the lead shank before taking the halter off a horse. This may prevent

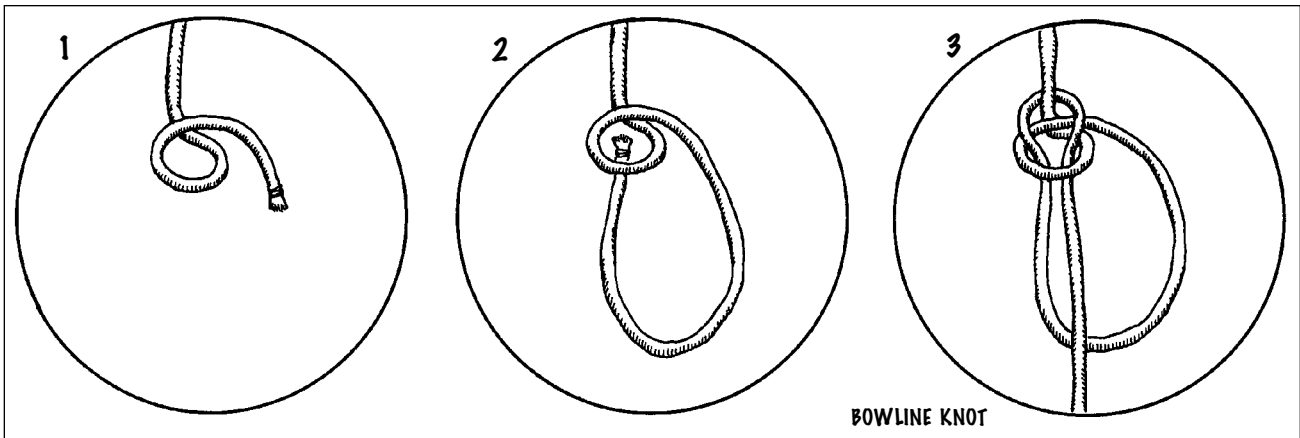
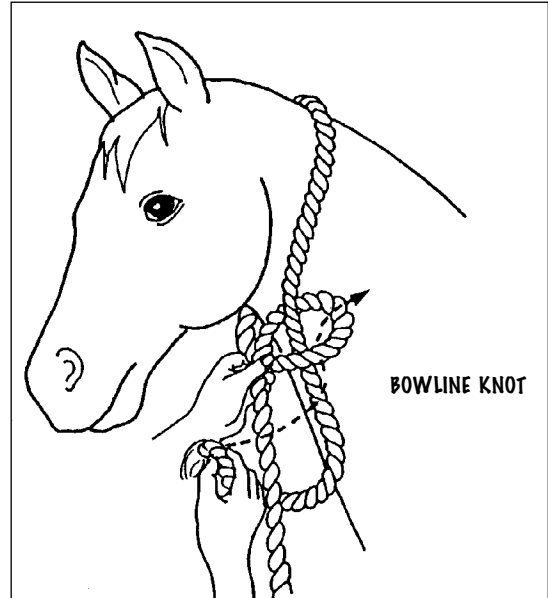


the horse from pulling back. Be sure to tie to an object that is strong and secure to avoid the danger of its breaking or coming loose if the horse pulls back. Tie to a post set in the ground and not to a rail on a fence.

Never tie a horse by the reins, as it may pull back, breaking the reins or injuring its mouth. Always use a sturdy halter and a ½-inch or larger lead rope of cotton, nylon, or other sturdy material. The rope should be long enough to reach the horse's rear.

It can be useful to teach a horse to **cross-tie** (stand tied between two posts), but be careful the first time. Most horses don't like having their heads held immobile, and many are frightened when they feel ropes pulling from the sides. Begin by having lots of slack in the ropes. Slowly shorten them until there is about 6 to 8 inches of overlap. You should always use quick-release snaps or slip knots when cross-tying, and clip the snaps to the siderings of the halter.

Never tie a horse with a chain on a lead shank. If the horse pulls back or rears, it could cause severe injury to the horse.



# RIDING

Wear your helmet at all times when riding. A horse should stand quietly and remain still until you are mounted and cue it to move off. Keep light control of the reins at all times. Never mount or dismount a horse in a barn or near fences, trees, or overhanging projections.

Until you know your horse, confine your riding to an enclosed area. Only after you are familiar with your horse and have good communication should you ride in open spaces or on a trail. Never ride your horse with just a halter and lead rope.

Ride at safe gaits. Never rush past riders who are proceeding at a slower pace. Approach them slowly, passing on the left if possible, and continue cautiously. Be careful about leaving other horses behind. Ask riders if it's okay to go on without them.

When walking abreast or single file, you should leave at least one horse's length between horses. You should be able to see the hind heels of the horse in front of or beside you. Leave extra space if you are behind a horse with a red ribbon tied in its tail, as that means the horse may kick.

To prevent a horse from becoming **barn sour** (wanting to rush home, often out of control), always walk your horse back to the stable or barn.

Walk when going downhill or over rough ground, sand, mud, ice, or snow. Be aware of terrain and ride appropriately.

Dogs and horses are not always good companions. Your dog may be a problem for other riders or horses, so be sure to ask others if it is okay to bring your dog along. If you do bring your dog, be sure you keep it under control at all times and obey any leash laws.

Riding at night can be a pleasure, but you must accept that it is more hazardous than daytime riding. Walk the horse; fast gaits can be dangerous. Be sure to wear light-colored clothing and carry a flashlight and reflectors. Ride in places that are safe and familiar.

If a rider is injured and appears in pain, lightheaded, or unconscious, do not move him or her. Unless the rider's safety is in question, let a qualified person assess the injuries and determine if and how the person should be moved.

## RIDING ON THE ROAD

Try to avoid paved or other hard-surfaced roads, and always walk your horse when crossing roads. If you need to ride on a road, follow the rules to help make it a safe and enjoyable experience.

- 1. Remember to wear your helmet.**
- 2. Be sure you know your horse well.**

Safety starts with a dependable horse. A nervous horse is far more difficult to handle away from familiar surroundings. Train your horse at home to confront new and strange objects quietly. If your horse becomes frightened, remain calm, speak to it quietly, steady it, and give it time to overcome its fear.

- 3. Never ride alone.**

Ride in single file, staying at least a full horse's length behind the horse in front. Place quiet horses in the front and at the rear of the ride.

- 4. Ride defensively.**

A person riding a horse on the road has to follow the same rules as the driver of a motor vehicle. Know the rules and regulations from your state's driver's manuals. Ride with the traffic, on the right-hand side of the road. Use the correct hand signals for turning or stopping. If your horse becomes frightened while a car is approaching, raise your hand palm up as if you were signaling a stop (the driver should slow down). Do not make unusual or unexpected moves. Be alert, courteous, and aware of others. Acknowledge drivers who slow down while passing you. Wear bright, colorful clothing that any motorist can see.

# FACILITIES

Whether you plan to keep your horse at your home or board it, you must make sure it has a safe and healthy environment. The facility should also be safe and convenient for you.

## GOALS FOR A WELL-MANAGED FACILITY

- A productive pasture with plenty of grass and few weeds
- Safe turnout areas
- Very little mud, even during the rainy season
- All manure and stall waste composted to feed the pasture, or removed from the facility and composted
- Convenient setup for the feeding and care of horses
- Safe fencing
- Safe, well-designed stalls

Be sure you know what the laws of your state require. Also, each county has different building codes and land use laws, and there are various water quality standards you must meet. It is important that what you do at your equine facility is both legal and environmentally sound. Ask the following questions about your facility (or the place where you board) to assess whether there are health or pollution concerns.

1. Are the horses in good health?
2. Is the drinking water clean?
3. Are there plants growing on streambanks?
4. Is all running water carrying manure or dirt diverted to avoid creeks or canals?
5. Is manure stored so that no pollutants infiltrate groundwater?

## SHELTER

Shelter is one of the basic requirements for horses, mainly to protect them from wind and give them a place out of the rain to dry off. Shelter also allows them to get out of the sun and avoid insects.

A simple shed is adequate shelter. A typical shed has three sides with the open fourth side facing away from the prevailing wind. It should have a high ceiling with no objects overhead, so a tall horse throwing its head up does not hurt itself. There should be slight drainage away from the shed to prevent mud problems.

A shed can be roomy enough to shelter several horses, but be sure it has several exits so no horse is cornered by another.

If you need a more controlled environment, a barn is a good option. There are many things to think about when designing a barn. Some of these include:

- Cost
- Safety
- Maintenance
- Convenience
- Ventilation
- Mud management
- Manure management
- Lighting
- Fire risk
- Rodent control
- Feed storage

There is excellent information on building barns in books and on the Web. Spend time doing research and visiting facilities before you begin your own building project. Following are some general guidelines:

- Barn aisles should be at least 8 feet wide with nonslip surfaces.
- Stalls should be at least 10 x 10 feet; 12 x 12 feet is better. Larger stalls may be needed for foaling.
- Ceiling and doors should be at least 8 to 9 feet high.
- Stall doors should be 4 feet wide.
- Walls between stalls should be at least 7 feet high. The bottom 5 feet may be solid with slats or screens above.
- Good ventilation is critical to avoid respiratory problems.
- Floors should be dry and level.
- Good lighting is a necessity.
- There should be easy access to electricity and water.

Check all buildings regularly for damage and projecting or sharp objects. Fix problems immediately. Clutter in and around the barn is always a safety hazard. Make sure aisles and common pathways are clear.

## FEEDING AND WATERING

A good facility is set up so that you can feed and water your horse easily. Water is available wherever you need it, and feed is stored for convenient access.



If possible, design so that you can feed without having to enter stalls, paddocks, or pastures. Horses can be aggressive around food, so this is a safety feature. It also usually makes feeding faster.

You can choose from a variety of feeder styles for both hay and grain. Whenever possible, feed horses at ground level. This is a horse's natural eating position, and it helps stretch the neck and back. Feeding at ground level also means there will be less chance of hayseeds or other debris falling into the horse's eyes, ears, and face. If you can feed at ground level, it is better to place the feed in a manger or tub rather than on the bare ground. This helps reduce waste, external parasites, and internal parasite ingestion. It can also help prevent sand colic.

Whether your horse is in a stall, turnout area, or pasture, it should have water available at all times. There are many types of water containers, but all should hold enough water to last from the time you fill them until you check them again.

Large tanks work well in pastures, and they are better insurance against your horse's running out of water. You can make tanks from bathtubs, wash tubs, or garbage cans, or you can buy regular watering tanks.

In a stall, you can use buckets or automatic waterers. Place buckets in a corner or hang them from a hook so they don't get knocked over. For mature horses, secure them about 38 to 42 inches off the ground. Automatic waterers make watering your horse easy, but some people don't like them because you can't tell how much water your horse has drunk. Research indicates that horses tend to drink less water when you use automatic waterers than when you use buckets. Drinking less water can lead to dehydration, colic, and other health problems.

Whatever containers you use to water your horse, be sure you keep them clean and change the water often. In the summer, empty them once a week and scrub them out. This eliminates algae growth and kills mosquito larvae. If it gets below freezing in the winter, remove any ice chunks twice a day. (See "Weather and Your Horse," page 77, for more cold-weather watering advice.)

## STORING FEED

Feed must be stored properly to maintain its quality. Store hay in a well-ventilated place to keep it from molding or getting powdery fungus. Use boards or pallets to keep it off damp floors. Keep hay under cover to protect it from rain, snow, or direct sun. Never stack wet hay in a barn, as spontaneous combustion can cause a fire. Remember that hay loses nutritional value over time, so don't store more than a year's supply.

Store grain in tightly covered containers to keep out rodents and other animals. To prevent mold, be sure the storage area is dry. Clean the insides of storage bins often, especially in summer, as they can mildew quickly. We suggest that you store no more than a 2-week supply of grain at a time, as grain molds can be deadly.

Be sure that horses cannot get into any feed storage areas.

## TIE AREAS

It is important to have a safe area to tie horses, whether inside the barn or outside in a paddock or field. Always tie to a solid, immovable object. A strong, tall, solid wall is the safest. Solid, heavy fence posts are safe as long as they are not on an electric or barbed wire fence. It is never safe to tie to a rail.

Place sturdy tie rings in walls, trees, or posts. The tie ring should be level with the horse's withers or higher. Cross-ties in barn aisles are recommended. (See "Tying," page 49.)

## STALL BEDDING

The more absorbent the bedding, the less you have to use. Using less bedding reduces the amount of waste, takes you less time to clean a stall, and costs you less.

One way to reduce the amount of bedding required is to use rubber mats in your horse's stall. Mats provide enough cushion for the horse that you need only enough bedding to soak up urine. Mats make cleaning easier because they are flat, which is also better for the horse's feet and legs. Mats also prevent a pawing horse from digging holes in the stall floor.

Even if you have rubber mats, you still need to put some bedding on them. Use whatever is available in your area as long as it is dry and not dusty.

KIND OF BEDDING	ADVANTAGES	DISADVANTAGES
Wood shavings	Absorbent Relatively inexpensive Easier to clean out Horses seldom eat them Keeps down odor	Can be dusty
Wood pellets	Absorbent Has little dust Easy to store Decompose quickly	High cost
Straw	Absorbent Relatively inexpensive Decomposes quickly	Hard to clean Difficult to store Highly combustible Horses may eat it
Recycled newsprint	Absorbent Soft Comfortable Pollen-free Has little dust	Highly combustible Sometimes difficult to dispose of it

Clean manure and wet bedding out of stalls once a day. About once a week, sprinkle lime on wet spots to neutralize the ammonia.

## TURNOUT AREAS

The healthiest equine lifestyle is for the horse to be turned out 24 hours a day, 7 days a week. The next best thing is as much turnout time as possible.

There are several types of turnout areas. Remember that the smaller the area, the higher the risk of injury.

Pens are at least 12 by 24 feet, about twice the size of a stall. While they do let the horse get outside, they are not big enough for a horse to get daily exercise.

Runs are long, narrow areas. They are usually about 20 feet wide. A 100-foot run allows the horse to trot, while a 200-foot run allows it to gallop.

Paddocks are large pens or small pastures, usually around ½ acre in size, that give a horse plenty of room to exercise. They should be grassy, though overgrazing is a common problem.

Fences in turnout areas should be level with the horse's eye or just above the withers.

Footing in a paddock area is important both for safety and health, especially in the winter. A thick layer of footing material, such as gravel or wood chips, keeps horses out of the dirt and lets rainwater drain through. Spread the material when the paddock is dry. If you use gravel, use ⅝-inch or less for your horse's comfort and to avoid lameness or bruising. Before you use wood chips, find out what type of wood it is, and check with your veterinarian to make sure that type is not toxic to horses.

## PASTURE MANAGEMENT

Pastures are grazing areas of 2 or more acres. If you maintain your pasture well, you'll greatly reduce the amount of hay needed to supplement your horse's diet. Plant hardy varieties of grass that grow well in your area (contact your local Extension office for advice).

Nothing contributes more to good pasture than controlled grazing. It's ideal to divide pastures into sections so you can rotate grazing from one part to another. The best grass length for grazing is 6 to 8 inches. Take horses off the pasture or move them to a different section when grass is 3 to 4 inches tall. This keeps the grass healthy and productive. It also helps control parasites. Horses grazing on taller forage are less likely to ingest larvae, because the larvae usually live in the lower couple of inches of grass.

Leave pasture free to grow back for about 3 weeks. During this time, drag the pasture to break up manure piles so parasite larvae will be killed by exposure to the sun. This also helps speed up composting. Mow or clip places where the grass is too long. While your horse is off the pasture, supplement its diet with hay, if necessary.

Keep brush, coarse grass, and weeds—especially poisonous tansy ragwort—pulled, cut, or sprayed to leave room for forage. In some areas, yellow starthistle and poison hemlock may be problems. Also, inspect your pastures for hazards such as rodent holes, glass, and sharp sticks.

During winter months or when soil is wet, limit horses' access to pastures to avoid compaction of soil and damage to roots by trampling. Use turnout areas during this time.

Do what you can to improve soil fertility. Have a soil test done regularly, and apply amendments as needed. Fertilize in the spring, and irrigate if possible. In the fall, you can use composted stall manure as fertilizer, but be sure to use a good deworming program.

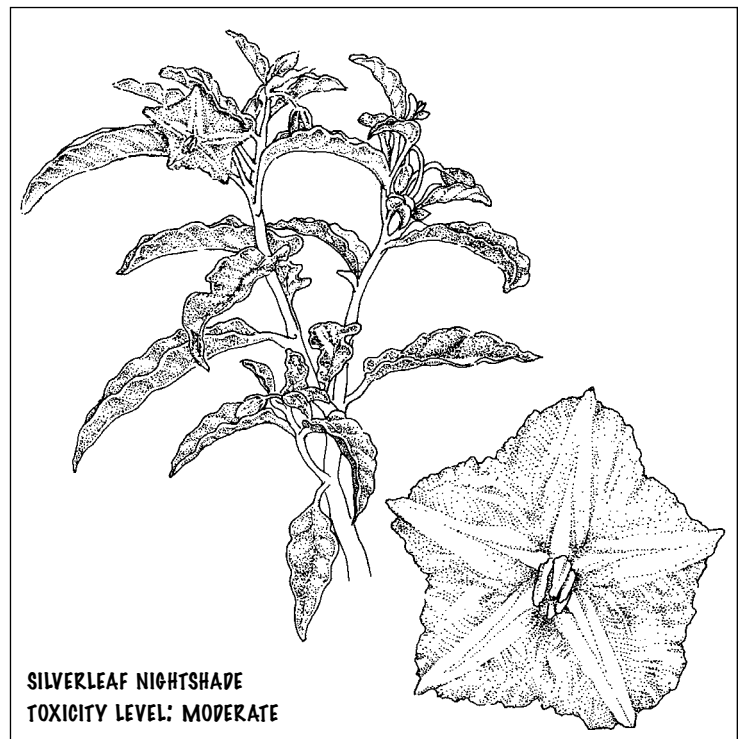
If a pasture has a stream or pond, limit horses' access to the water to avoid contamination and destruction of vegetation. Use trees and hedges already growing along banks, plant "living fences," or put up fences to help restrict the horse's access. If a stream is your water source, build a ramp to limit damage to the bank. When possible, create an alternate drinking source using gravity flow or pumping water to fill a remote watering tank.



## A GUIDE TO PLANTS OF THE NORTHWEST THAT ARE POISONOUS TO HORSES

NAME (SCIENTIFIC NAME)	HABITAT	TOXICITY LEVEL	CLINICAL SIGNS
yew ( <i>Taxus</i> )	Throughout U.S.	Very high	Nervousness, difficult breathing, incoordination, convulsions
azalea/laurel/rhododendron ( <i>Rhododendron</i> spp.)	Throughout N. America	Moderate	Acute colic, diarrhea, excessive salivation, depression
red maple ( <i>Acer rubrum</i> )	Throughout U.S.	High	Dark/discolored mucous membranes, brown/red urine, depression, colic
chokecherry/wild black cherry ( <i>Prunus</i> spp.)	Northwestern, northeastern, through southern U.S.	High	Tremors, frequent urination/defecation, gasping, convulsions
black walnut ( <i>Juglans nigra</i> )	Northeastern to central U.S.	High	Edema in legs, increased heart/respiratory rates and temperature, laminitis
johnsongrass/sudangrass ( <i>Sorghum</i> spp.)	Throughout N. America	Low	Tremors, frequent urination/defecation, gasping, convulsions
yellow starthistle/Russian knapweed ( <i>Centaurea</i> spp.)	Western U.S., southern Canada	Low	Inability to swallow food, tongue lolling, "grinning" expression
nightshade ( <i>Solanum</i> spp.)	Throughout N. America	Moderate	Trembling, incoordination, diarrhea
ragwort/groundsel/houndstongue ( <i>Senecio</i> spp.)	Throughout N. America	Moderate	Weakness, liver failure, incoordination, yellow mucous membranes
oak ( <i>Quercus</i> spp.)	Throughout N. America	Variable	Colic, constipation followed by bloody diarrhea, frequent urination

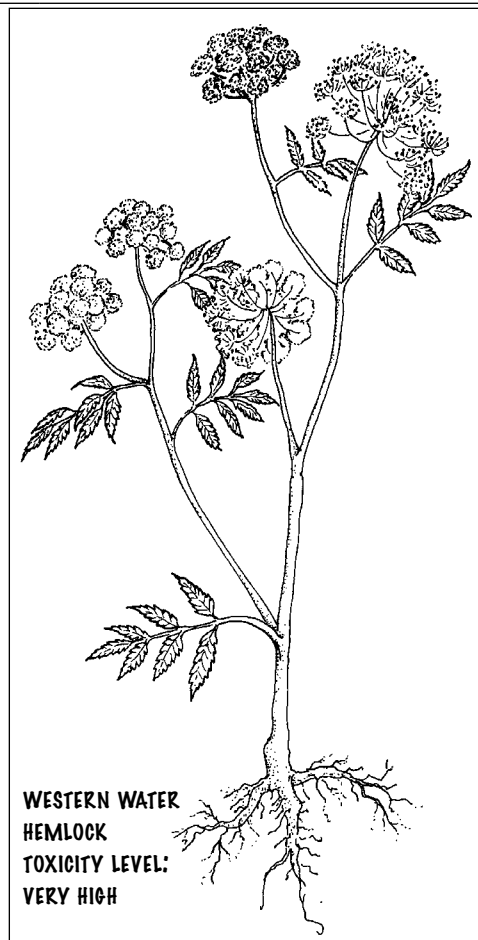
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**A GUIDE TO PLANTS OF THE NORTHWEST THAT ARE POISONOUS TO HORSES\* (CONTINUED)**

	<b>NAME (SCIENTIFIC NAME)</b>	<b>HABITAT</b>	<b>TOXICITY LEVEL</b>	<b>CLINICAL SIGNS</b>
<b>WILDFLOWERS AND WEEDS</b>	bracken fern ( <i>Pteridium aquilinum</i> )	Forested areas	Low	Emaciation, incoordination, depression, paralysis
	buttercup ( <i>Ranunculus</i> spp.)	Wet areas in N. America	Variable	Diarrhea, salivation
	foxglove ( <i>Digitalis purpurea</i> )	Western U.S.	High	Diarrhea, labored rapid breathing, cardiac irregularities
	jimsonweed ( <i>Datura stramonium</i> )	Throughout N. America	Moderate	Excitability then depression, dilation of pupils, colic, diarrhea
	larkspur ( <i>Delphinium</i> spp.)	Midwest, western U.S.	High	Hypersensitivity, trembling, collapse, convulsions
	locoweed ( <i>Astragalus</i> spp.)	Southwest, western N. America	Low	"Loco" behavior, incoordination, odd head carriage, weight loss
	lupine	Throughout N. America	Varies with species	Weakened pulse and respiration, convulsions, depression. Causes liver damage.
	milkweed ( <i>Asclepias</i> spp.)	Throughout N. America	High	Incoordination, depression, shallow breathing, unsteadiness, coma
	sagebrush ( <i>Artemisia</i> spp.)	Western N. America	Low to moderate	Forelimb incoordination and falling, excitability
	water hemlock ( <i>Cicuta</i> spp.)	Throughout N. America	Very high	Violent spasms, rapid respiration and heart rate, coma
<b>TREES</b>	elderberry ( <i>Sambucus</i> spp.)	Wooded, most areas of U.S.	High	Tremors, frequent urination/defecation, gasping, convulsions
	horse chestnut/buckeye ( <i>Aesculus</i> spp.)	Eastern, southern U.S.	Moderate	Muscle tremors, incoordination

\*Adapted from article by Jack Moore, Equus; and with the consultation of Jean Smith, Benton-Franklin Co., Washington State University Extension animal scientist



# ARENAS AND ROUND PENS

Arenas and round pens are places where you can ride or exercise your horse. A round pen is highly useful for training and longeing, as well as providing a place to turn a horse out. A 60-foot diameter is a good size, although it can be as small as 35 feet depending on its main use. A round pen should have walls 6 feet high and all-weather footing.

The size needed for an arena depends on what activities you plan on doing. Here are some standard guidelines:

Pleasure riding	100 x 200 feet
Dressage	66 x 198 feet (20 x 60 meters)
Jumping	80 x 120 feet minimum, 150 x 300 feet for full courses
Reining	100 x 200 feet
Roping	150 x 300 feet
Barrel racing	150 x 260 feet

All arenas should be well-drained, but the footing required depends on the activity. A 6-foot fence is helpful. The arena can be rectangular or have rounded corners (better for jumping and driving).

## FENCING

Fences must be stronger and more visible for small areas or if you are enclosing several horses. Mark fences with white plastic or cloth strips to improve visibility, particularly when you add new horses. Generally, the smaller the area, the sturdier the fence needs to be.

There are many types of fencing. Woven wire, wood, and pipe are recommended. Refer to the fencing chart on the next page for the advantages and disadvantages of each type. You can use different types of fencing in combination (for example, running an electric wire at the top of a woven wire fence). Avoid using barbed wire if at all possible; it is extremely hazardous to horses.

Pasture perimeter fences should be at least 5 feet high (up to 6 feet for taller breeds).

Check fences often for needed upkeep. Don't neglect repairs until the horse escapes or is injured.

## GATES

The safest gates have a secure fastening, swing both directions, and are easy to operate with one hand. The minimum width is 4 feet for horses, but gates into pastures or buildings must be wide enough to get equipment through, too (usually at least 12 feet wide). The gate should hang a minimum of 6 inches above the ground, but it may need to be higher in an area of high snowfall.

Many types of gates (mesh, tube, wood, etc.) are suitable. Channel steel or aluminum gates are not recommended. These bend and break easily, leaving razor-sharp edges. If a horse catches a foot in one, it can be seriously injured. If a cable is necessary to support a gate, make sure it cannot endanger the horse.

If possible, locate gates in the center of paddock fences and away from corners in a pasture. This helps prevent a horse from getting pinned in a corner.

## MANURE MANAGEMENT

Clean up pastures, paddocks, and stalls to manage parasites and mud and keep your horse healthy. Clean stalls daily. Clean turnout areas and pastures at least every 3 days.

A 1,000-pound horse produces about 50 pounds of manure per day. In 1 year, that's enough to fill more than 13 pickup trucks. The best solution is to compost the manure and use it as fertilizer. Composting reduces the volume of the material up to 50 percent, and it kills parasite eggs and weed seeds. Composting also converts nutrients to a form plants can more readily use. Spread the composted manure on pastures during the growing season or on gardens, trees, and flower beds.

Composting techniques vary according to climate and geographic area. Contact your local Extension office for composting guidelines appropriate for where you live.

TYPE OF FENCING	SAFETY TIPS	BENEFITS	DISADVANTAGES
Wood	<ul style="list-style-type: none"> <li>• Paint or stain must be nontoxic</li> <li>• Boards must be secured to the inside (or horse side) with nails or hex screws</li> <li>• Posts should be pressure treated and at least 4 inches square or round with the top angled for drainage</li> <li>• Posts should be 6 to 8 feet apart (measured center to center)</li> <li>• A 60-inch fence would have four to five 1- by 6-inch rails (2- by 6-inch minimum if fencing a small area)</li> <li>• The bottom board should be 9 to 12 inches above ground</li> </ul>	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Attractive</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• High maintenance</li> </ul>
Post-rail	<ul style="list-style-type: none"> <li>• Minimum of three rails for horses, preferably four or five for security</li> </ul>	<ul style="list-style-type: none"> <li>• Aesthetically pleasing</li> <li>• Safe</li> <li>• Durable</li> </ul>	<ul style="list-style-type: none"> <li>• Rails can slip out of posts</li> <li>• Expensive</li> <li>• Susceptible to rot and chewing by horses</li> <li>• Easily damaged by falling trees and floods</li> </ul>
Wire-mesh	<ul style="list-style-type: none"> <li>• 5 Diamond V mesh wire is the strongest design</li> <li>• Two wide by four high wire OK but not recommended for smaller areas</li> <li>• Good for stallion paddocks or smaller paddocks</li> <li>• 6-inch board on top of fence helps prevent sagging</li> <li>• 4- to 6-inch posts on 8-foot centers with the wire 8 to 12 inches off ground</li> <li>• Stock-woven wire needs a top plank; should be at least 10 gauge; woven better than welded</li> </ul>	<ul style="list-style-type: none"> <li>• Very safe</li> <li>• Horses cannot get feet through wire if proper horse-type mesh is used</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively expensive</li> <li>• Shod horses could catch the heel of a shoe in the fence</li> <li>• Harder to keep tight</li> </ul>
High-tensile wire	<ul style="list-style-type: none"> <li>• 12½ gauge wire</li> <li>• Spaced as much as 60 feet apart</li> <li>• Needs good brace supports</li> <li>• Tie reflectors/cloth every 10 to 12 feet for visual impact</li> </ul>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Easily installed</li> </ul>	<ul style="list-style-type: none"> <li>• Poor visibility</li> <li>• Possibility of horse getting tangled in wire and being injured</li> <li>• Less of a barrier if there are power outages</li> </ul>
Electric	<ul style="list-style-type: none"> <li>• Top wire should be 42 inches above ground</li> <li>• Bottom wire should be 18 inches above ground</li> <li>• 1½-inch encased electric wire the best</li> <li>• Posts can be dangerous if not capped</li> </ul>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Easily installed</li> </ul>	<ul style="list-style-type: none"> <li>• Poor visibility</li> <li>• Should not be used as a perimeter fence because it is not a physical barrier</li> <li>• Requires a power source</li> </ul>
Hi-tech	<ul style="list-style-type: none"> <li>• Polymer-coated wood</li> <li>• Flexes but is strong</li> <li>• Best installed during warm weather</li> </ul>	<ul style="list-style-type: none"> <li>• Low maintenance</li> <li>• Safe</li> <li>• Aesthetically pleasing</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> </ul>
Chain link		<ul style="list-style-type: none"> <li>• Fairly safe</li> </ul>	<ul style="list-style-type: none"> <li>• When stretched, it won't remain taut</li> <li>• Has sharp edges</li> <li>• Lacks horizontal strength</li> <li>• Expensive</li> <li>• Difficult to install</li> </ul>
Barbed wire (not recommended for horses)	<ul style="list-style-type: none"> <li>• Better for quiet older horses that are used to each other</li> <li>• Larger areas with backdrops</li> <li>• Bottom wire at least 12 to 18 inches above ground</li> <li>• Best used with electric fence, placed 6 inches out from barbed wire</li> <li>• Top and bottom wires best if not barbed</li> </ul>	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Easily installed</li> </ul>	<ul style="list-style-type: none"> <li>• Poor visibility</li> <li>• Dangerous for horses</li> </ul>
Pipe		<ul style="list-style-type: none"> <li>• Safe</li> <li>• Can be spaced 20 feet apart</li> <li>• Low maintenance</li> <li>• Secure (good for stallion paddocks)</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> </ul>
Vinyl		<ul style="list-style-type: none"> <li>• Safe</li> <li>• Attractive</li> <li>• Low maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• UV can limit life span—may become brittle</li> </ul>

# FIRE SAFETY

A barn fire can be devastating. Take every possible step to protect the barn (or other horse facilities) from fire. Make sure you have a plan and know where you will secure your horses in case of a fire. Practice a fire drill several times a year so everyone knows what to do. Keep important phone numbers where you can find them quickly, and post directions to your barn next to the phone.

To help prevent a fire, follow these fire safety guidelines:

1. Do not allow smoking in or around the barn, hay, or bedding. Post “No Smoking” signs, and enforce the ban.
2. Keep your barn clean. Dust and cobwebs are fire hazards. Remove combustible items such as old rags, sacks, loose hay, or equipment that may leak gas or oil.
3. Mow or spray brush and tall grass and remove trees and debris within a 50-foot radius of the barn or horse facilities.
4. Protect against lightning. Install a grounded lightning rod system to protect your barn during electrical storms.
5. Be sure to have adequate and appropriate fire extinguishers. Place them every 40 feet, or keep one at each entrance, in the tack room, and near feed storage areas. Make sure they are charged, and protect them from freezing.
6. Try to have a large water supply inside and outside the barn. Keep hoses drained, and protect them from freezing in the winter. Keep a hose attached to your external water supply.
7. Install smoke detectors. Detectors and alarms that sense heat and smoke can save critical time if a fire does start. Check them regularly (at least twice a year) and replace batteries when necessary. You may want to connect the detector to a loud, external siren that can be heard far from the barn.
8. Cage all electric light fixtures and protect them from horse, rodent, or weather damage. Enclose all electrical wiring in conduit. Periodically check wiring for damage and replace if necessary.
9. Never lock stall doors. Keep halters and lead ropes close to each stabled horse. Consider marking each with glow-in-the-dark paint or reflectors. Keep a container with a supply of empty feed sacks or towels available for blindfolds.
10. Store hay and bedding in a separate building from the stalls. (Some insurance companies require hay to be stored separately, so check with your agent.)

Keep hay away from electrical outlets, the main fuse box, and electric fence units.

11. Make sure that the hay you store is properly cured and that it's kept dry. Check new hay frequently for hot spots. Wet hay can start fires through spontaneous combustion.
12. Don't use extension cords. If you must, use an industrial-grade cord, and don't overload it.
13. Know the location of all master electrical switches, and make them easily accessible.
14. All appliances in the barn should be UL listed. Never use portable heaters. Use caution with heated elements, such as water heaters, trough heaters, or heat tape.
15. Build barns out of noncombustible materials. Look for pressure-treated wood, because it burns more slowly.

Ask your local fire department to do a walkthrough of your barn to point out other fire-prevention steps you can take.

## IN CASE OF A FIRE

If a fire does break out, **stay calm**. Call the fire department. In a calm, clear voice, give your name, farm name, and location. If the address is different than the house, give directions. Do not hang up until you are sure the information was heard.

Open only one door of the stable. As long as possible, keep the flow of air to a minimum so the fire will not explode. If the fire is spreading rapidly and there is heavy smoke, stay out of the barn. **Do not risk your own life to rescue your horse.**

- Lead each horse out of the barn, and take it to a paddock a safe distance from the barn and out of the way of fire trucks and equipment. If the horse won't be led, blindfold it using a towel, handkerchief, or sack. Wet the blindfold in water before putting it on the horse's head and eyes.
- Do not turn a horse loose, because it might run back into the barn.
- Save equipment stored in the barn only after horses are out.
- Open all access gates to the barn area and keep roads clear for fire trucks.
- Use whatever firefighting equipment you have to contain the fire until help arrives.
- Once help arrives, step aside and let the professional firefighting crew handle things.
- As soon as possible, check your horses for injuries. Call a veterinarian if horses are burned or have inhaled smoke. Check for burns around the horse's nostrils and eyes. Keep any burned areas on the body or legs moist with a cold, wet cloth.



# FEED AND NUTRITION

The greatest single cost in keeping a horse is feed. You must learn exactly what nutrients a horse requires as well as how to compare costs and judge quality. You also need to understand how a horse digests its food, because its digestive process is what makes the horse one of the most complicated of the domesticated animals to feed.

## THE DIGESTIVE SYSTEM

Two basic types of digestive systems are found in animals. One is the **simple stomach system** typical in pigs and humans. The other is the **ruminant system** typical in cattle and sheep.

The simple stomach is adapted to digest less bulky feeds such as vegetables and grains, and its capacity is small. Digestion occurs by digestive juices. The ruminant system is designed to digest bulky, coarse feed such as grass and hay, and it has a much larger capacity. Much of the digestion in a ruminant occurs through fermentation by microbes (bacteria and protozoa) rather than by digestive juices.

The horse's rather unusual digestive system is a combination of these two types. It is considered a nonruminant herbivore, or **hindgut fermentor**. The hindgut consists of the large intestine (cecum, colon, rectum, and anal canal), while the foregut consists of the stomach and small intestine.

The horse has a simple, small stomach and a large cecum and colon. Food passes through a horse much faster than in ruminants, so its digestion is less efficient. In total, food material spends about 1 to 6 hours in the foregut and 18 to 36 hours in the hindgut.

A horse's digestive process begins in its mouth. Unlike a cow, which can wad up and swallow hay or grass without chewing it thoroughly, the horse must chew its food to reduce its bulkiness and add saliva to start the breakdown. If food is not broken up, the horse does not digest it well and gains few nutrients from it.

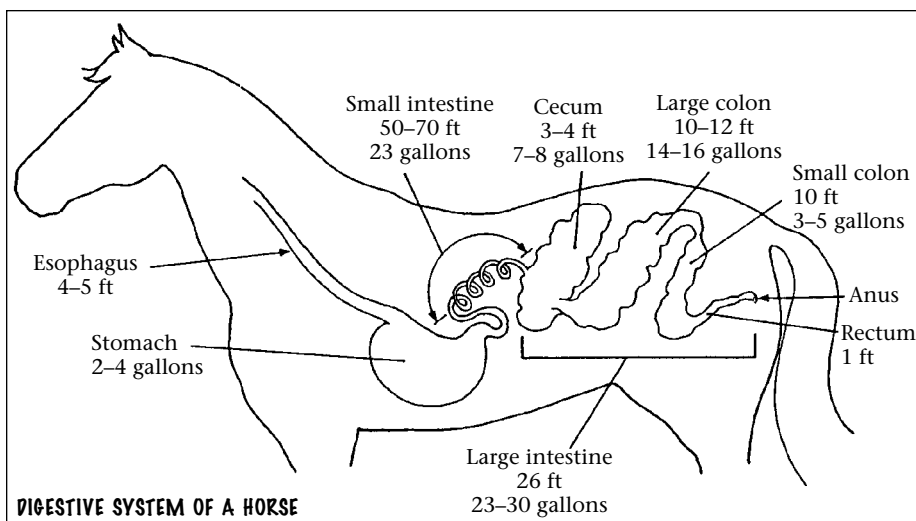
The chewed food goes down the esophagus to the stomach, where digestive juices continue the process. A horse's stomach is small. The stomach of a 1,000-pound horse holds only 2 to 4 gallons of food. Its small stomach limits the amount of food a horse can eat at one time. A horse is naturally a grazing animal, eating small bites here and there for 15 to 20 hours a day; so, domesticated horses do best when fed small amounts several times a day.

The stomach begins to empty when it is about two-thirds full. This is a safety mechanism to keep the stomach from getting too full and rupturing (because a horse cannot vomit). Food stays in the stomach only a short time before moving on to the small intestine.

In the small intestine, most of the starch, sugar, fats, vitamins, and minerals are absorbed. About half the protein also is digested here and absorbed into the bloodstream. The small intestine is about 50 to 70 feet long and holds 10 to 23 gallons.

Next, food moves through the large intestine, starting in the cecum and progressing through the large and then small colon. Here is where fermentation—microbial action more like that of a cow—takes place. Bacteria and other organisms digest the fibrous material. The remaining protein and some minerals are absorbed here.

The entire hindgut can hold about 23 to 30 gallons. The cecum, which is 3 to 4 feet long, holds 7 to 8 gallons. The 10- to 12-foot large colon holds 14 to 16 gallons, and the 10-foot small colon holds 3 to 5 gallons.





Because of the horse's combination type digestive system, it can eat both grains and forage. However, this digestive system makes the horse prone to health problems such as colic and founder. So, there are several things you must keep in mind when determining what to feed your horse.

1. A horse's digestive system works well when its feed consists mainly of grass and hay. The system does not work well when too much grain is added to the diet. (Grains are very high in starch. Excess starch cannot be digested in the foregut, so it is passed to the hindgut. Extra starch in the hindgut increases the number of starch-digesting bacteria. These produce lactic acid, which makes the large intestine more acidic. The fiber-digesting bacteria can't survive in acidic conditions, and when they die, they release toxins. Colic and/or founder are often the result.)
2. The horse has no gall bladder. This makes it hard to digest and get nutrients from a diet that is high in fat.
3. Remember that the digestibility of the food is just as important as the food's nutrient content. The horse gets no benefit from foods it cannot digest.

## NUTRIENTS

There are six essential nutrients: proteins, carbohydrates, fats, vitamins, minerals, and water. A horse must receive all nutrients in the proper amounts, as both too little and too much can cause health problems.

A **balanced ration** supplies all required nutrients in the proper amounts for each individual horse. A **maintenance diet** provides the minimum amount needed to keep the horse in the same physical condition.

### PROTEIN

Proteins are necessary for all of life's processes. They are especially important for growth, reproduction, and lactation. They are required for muscle repair and building. The requirement for most adult horses is 8 to 10 percent of the ration.

Good-quality hays and grains have enough protein for most horses. Cultivated grass hay contains about 9 percent protein, and alfalfa averages about 15 percent. Native grass hay averages only 7 percent and may be as low as 5 percent. Therefore, it must be supplemented.

Horses need more protein at certain times of their lives. Mares should receive 11 percent protein in their last 90 days of pregnancy

and 14 percent while lactating. Growing foals should receive 18 percent protein, as most tissue growth occurs at an early age. Grain alone, with only 10 percent protein, cannot supply these extra needs. Common sources of extra protein are legume hays, pasture, soybean meal, and linseed meal.

Signs that a horse is deficient in protein include weight loss; a rough, coarse coat; slow growth; a decline in the horse's performance; and a decrease in a mare's milk production.

Horses also can suffer from too much protein in their diet. Too much protein can lead to dehydration and an electrolyte imbalance. Signs of too much protein include drinking more water, urinating larger amounts, and sweating more profusely.

### CARBOHYDRATES

Carbohydrates are the horse's main source of energy. After a horse's basic requirement for maintenance is met, extra energy is used for work, growth, and milk production, or stored as body fat. The amount of energy a horse requires is determined by the horse's size and by the amount and kind of work it performs.

Carbohydrates include sugars, starches, and cellulose. Glucose, a simple sugar, is the main building block of carbohydrates and the chief form in which the horse absorbs carbohydrates.

Grains such as oats, barley, and corn may be as much as 60 percent carbohydrates. They are excellent sources of energy. Due to the relatively small size of the horse's digestive system, an increased need for energy is met by adding grain and decreasing the amount of hay.

### FATS

Fats are the densest source of energy. They contain about twice as many calories per pound as carbohydrates and protein, and they provide more body heat. Premixed feeds usually contain 2 to 6 percent fat, which is easily enough to maintain a horse. If a horse's diet lacks fat, the horse may develop rough skin and a thin, rough hair coat.

### VITAMINS

Vitamins are required in small amounts to help regulate chemical reactions within the body. Each vitamin has a unique function and cannot be replaced with another. Also, a deficiency of one vitamin can interfere with another's function. Deficiencies affect growth, reproduction, and general health, but symptoms can be difficult to diagnose.

Most horses get enough vitamins in their normal diet. Green leafy forage contains most

vitamins and, along with sunshine, usually supplies a horse with all it needs. You may need to give your horse a vitamin supplement if your feed is low quality, if the horse is under stress, if it is not eating well, or if it is doing strenuous work.

Do not feed a vitamin supplement unless it is needed. Feeding more than the recommended allowance is a waste of money and can cause health problems.

### **VITAMIN A**

Green grass and legume hay contain carotene, which is converted to vitamin A in the animal's body. Vitamin A maintains the health of mucous membranes (such as those found in the respiratory tract), and increases resistance to respiratory infections. Severe deficiency may cause night blindness, reproductive difficulties, poor hoof development, difficult breathing, incoordination, and/or poor appetite. Alfalfa leaf meal is used in pelleted commercial supplements to supply this vitamin.

Oxidation (exposure to air) destroys vitamin A. Therefore, hay that has sat for more than a year has very little vitamin A left in it.

### **VITAMIN D**

Sunlight is the natural source of vitamin D. Horses kept inside may be deficient and need a supplement. This vitamin helps develop sound bones and teeth, so requirements are high during growth. A serious deficiency may cause rickets, slow growth, or weak bones and teeth. Cod liver oil or dried yeast with vitamin D added are effective supplements.

### **VITAMIN E**

Green pasture or hay supplies vitamin E. The amount of vitamin E in hay decreases with plant maturity and with the length of storage time. Poor feed or stress may cause a deficiency. Broodmares, stallions, or racehorses may need additional vitamin E to aid in the development and maintenance of muscle. Soybean meal or wheat germ oil provide additional amounts.

### **VITAMIN K**

Vitamin K is needed for the production of blood clots. Internal bleeding may occur if there is a deficiency.

### **VITAMIN C**

A horse's liver produces vitamin C. A horse almost always has a sufficient quantity, so there is no need to supplement this vitamin.

## **MINERALS**

Minerals are essential for sound bones, teeth, and tissues. They are needed for maintenance of body structure, fluid balance,

nerve conduction, and muscle contraction. Minerals are important at all stages of life, but pregnant mares have increased requirements and lactating mares even more.

Proper mineral balance is very important, because one mineral can counteract the effect of another. For example, too much phosphorous reduces the amount of calcium and other minerals that a horse can absorb. Consult a veterinarian or do further research to determine the proper supplements for your horse. Most horses get enough minerals in their regular diet, with the exception of salt.

### **SALT**

Horses may lose 1 to 2 ounces of salt per day in sweat. Lack of salt may contribute to heat stress, poor appetite, or a rough coat. Most horse feeds are deficient in salt, so horses need free access to salt in block or granular form. Iodized or trace mineralized salt is recommended.

Salt should always be available in summer or if the horse is being worked hard. Loose salt may be better in the winter, because the horse may not lick a block as much.

The salt requirement varies according to temperature and the amount of work. On the average, a horse consumes 2 ounces of salt daily or about 1 pound per week. Horses on green pasture usually require more salt.

Protect salt and mineral supplies from rain or other moisture to prevent waste.

### **CALCIUM AND PHOSPHORUS**

The ratio of calcium to phosphorus in the diet is critical. In general, the ration should be two parts calcium to one part phosphorus for weanlings and yearlings. As the horse matures, it needs much less phosphorous in relation to calcium. The amount of phosphorus should never exceed the amount of calcium.

Rickets, fragile bones, or other abnormal bone development can occur from a calcium-phosphorus imbalance. Hormone imbalance may also result.

High-quality hay meets the calcium needs of the mature horse, but grass hays and grains usually do not supply enough calcium for the growing horse and pregnant or nursing mare. Legume hay is a rich source of calcium.

Grains are a good source of phosphorus. However, a diet with too much grain is likely to produce a calcium-phosphorous imbalance.

A good source of supplemental calcium and phosphorous for growing horses is dicalcium phosphate mixed half-and-half with salt to make it palatable. One-fourth cup per day supplies the needs of a pregnant or nursing mare. Foals require less. Commercial mixes also are available.

## IODINE

Feeds grown on Pacific Northwest soils are deficient in iodine. Lack of iodine may cause goiter or stillborn or weak foals. Iodized salt is recommended.

## IRON

Most grass and hay are iron-rich, but a mare's milk is deficient. Make sure foals have access to trace-mineralized salt, which contains iron. The body uses iron to form hemoglobin, which enables the blood to carry oxygen, so a deficiency may cause anemia.

## SELENIUM

Some Northwest soils are deficient in this mineral, which is important for proper utilization of vitamin E. Pregnant mares, foals, and young horses particularly need selenium to help prevent skeletal and muscle disorders. Some commercial feed supplements contain selenium, or it may be injected.

There is a very narrow range of normal levels of selenium. Too much can be dangerous (it is toxic), so be careful not to give more than is needed.

## WATER

Water is as essential to good nutrition as any solid feed. In fact, water is considered the most important nutrient, as a horse cannot live long without it. It is the major component of blood, which carries nutrients to all parts of the body. It picks up waste products and helps eliminate them. Be sure that fresh, clean water is available to your horse at all times.

Normally, a mature horse drinks 10 to 12 gallons of water a day. When the temperature is high or during work, it can drink considerably more than that. A lactating mare also drinks more water than usual.

See "Weather and Your Horse," page 77, regarding dehydration in hot weather and watering strategies for winter.

# TYPES OF FEED

Feed includes **roughages** (pasture and hay), grains or concentrates, and supplements. Whichever feeds you choose, be sure they are good quality. The quality of the feed is far more important than the quantity fed.

## PASTURE

Using pasture reduces feed costs, particularly if the pasture is well managed. (See "Pasture Management," page 54.) A horse that

grazes freely during the summer requires little else to meet its nutritional needs.

Pastures may include both native ranges and improved fields. Grass grown in fertilized fields is more nutritious than native grass.

Remove horses from pasture during the winter to avoid damage from trampling. Winter growth is high in water content and not very nutritious, so you would need a hay supplement and possibly grain and other supplements also. Allow the grass to become well established before turning horses out in the spring.

When returning the horse to pasture in the spring, follow a careful schedule to avoid founder. Feed the horse first, then allow it only 1 to 2 hours grazing the first week, 2 to 4 hours the second week, and 6 to 8 hours the third week. Shorten the time if the horse's crestline thickens or its droppings are loose.

## HAY

Hay is forage that has been cut, dried, and baled. There are two categories of hay: legumes and grasses. **Legumes**, such as alfalfa and clover, are higher in protein, calcium, and vitamin A. **Grass hay** is higher in fiber content and lower in digestible energy. Common grass hays are timothy, orchardgrass, fescue, bentgrass, and ryegrass.

Good-quality grass hay has enough nutrients to sustain a horse. The horse can eat more without getting fat, which is better for the horse's digestion and helps relieve boredom. Take care when feeding alfalfa to make sure the protein level isn't too high and the horse doesn't get overfed. Mixing alfalfa and grass hay together is often a good choice.

Hay is most nutritious when it is cut before maturity. The older a hay is when it is cut, the more fiber it has and the less digestible it is.

Older hay also has less protein and phosphorus.

Hay should have a high leaf-to-stem ratio. Most of the nutrients are in the leaves, and they are also more palatable. Stems are hard to digest and low in nutritional value. So, leafy hay gives more value per ton.

Quality hay should be green: the greener the hay, the higher it is in vitamins, especially vitamin A. Hay that has been left in the rain will not be green and will have few vitamins left in it.

All hay should be sweet smelling and free of dust, dirt, and foreign objects. It should contain no weeds, especially poisonous types. **Never** feed moldy hay, as it can cause heaves, colic, and abortion.

**Chopped hay** has been cut into pieces about an inch long and then bagged. It can be quite dusty, so molasses or oil usually is added. This product can be fed to horses with

respiratory problems or that have trouble chewing. You can mix grain in with chopped hay when feeding.

## GRAINS AND CONCENTRATES

Grain generally is not necessary for mature horses, and they certainly need far less than most owners think they do. Lactating mares, young growing horses, and hardworking horses need grain added to their diet. Do not feed grain within 1 hour before or after hard work.

Grains and concentrates (pelleted or sweet feed) are low in fiber, highly digestible, and less bulky than roughage. The energy value of different grains varies widely. Know the nutritional value of each and feed only what is needed. No more than half the ration should be concentrates.

### OATS

This popular grain contains the correct balance of nutrients and is a relatively safe feed. Horses can digest the starch from oats in the foregut, leading to fewer digestion problems. Oats are higher in fiber, protein, and minerals than many other grains, and they are highly digestible and palatable.

Oats can be fed whole, rolled, or crimped. Rolled oats are recommended for very young or old horses that cannot chew well. Whole oats are generally less dusty and do not mold as easily.

Varieties of oats include gray, white, and red. White are most commonly used because they are the softest and easiest to roll.

### BARLEY

Barley is higher in energy than oats, so you don't need to feed as much. It is moderate in fiber, nutritious, and palatable. It can help a horse gain weight.

Feed only steamrolled or crimped barley. The hard hulls of whole barley must be processed or they are very hard to digest.

### CORN

Corn is a high-energy carbohydrate that is relatively expensive in the Northwest. It is low in fiber, protein, calcium, and other minerals. It has a high calorie content, so it is fattening and can cause obesity. Use corn with caution, as it is easy to overfeed.

Corn should be cracked or rolled. This makes it somewhat dusty, but it is a satisfactory feed when used in combination with other feeds and molasses. Never feed moldy corn: it can be lethal.

### WHEAT

Wheat is higher in energy than corn. It generally is not used as a grain for horses due to its high cost. It is best used in a feed mixture, as it is not very palatable by itself. The hard kernels must be processed, or the horse cannot digest them.

### WHEAT BRAN

This is the coarse outer covering of the wheat kernel. It contains about 16 percent protein, but only about 50 percent is digestible. It also contains a good amount of phosphorus. Because it is high in bulk, it is a good laxative. Bran mash is prepared by mixing bran with hot water to the consistency of oatmeal and allowing it to steam under cover until cool.

### RYE

Although it is high in protein, rye is not very palatable and is seldom used as a horse grain. It is susceptible to the "ergot" fungus which can cause severe health problems.

### ALFALFA PELLETS

Alfalfa hay is mowed and chopped in the field, then dried at a dehydrating plant, ground, and formed into pellets. The pellets can become quite dusty, which adversely affects horses with respiratory problems. A horse's diet cannot consist solely of alfalfa pellets, because the particles in the pellets are not large enough to maintain normal digestion.

### ALFALFA CUBES

An alternative to pellets, these are made by coarsely chopping alfalfa hay and then compressing it into small cubes (usually about 2 x 2 inches). This process does not reduce the nutritional value of the feed; it remains the same as hay. The material in the cubes is large enough to maintain normal digestion. While alfalfa is the most common, cubes can be made from other types of hay as well, and grass and alfalfa may be mixed in a cubed feed.

There are several advantages to feeding cubes over baled hay. Generally, there is less waste, and the quality tends to be more consistent. Cubes are easier to handle, it is easy to monitor the exact amount being fed, and they require less storage space. Cubes also have little dust, making them a much better choice than pellets for horses with respiratory problems.

Disadvantages to feeding cubes are that horses can choke from eating them too fast, they are more expensive than hay, and horses can become bored because they spend less time eating. Also, you must carefully regulate how much is fed, as it is easy for a horse to overeat and become fat or have digestive problems.



## BEET PULP PELLETS

Beet pulp is the fibrous material left after processing sugar beets. It is an easily digestible fiber supplement that can replace other forage in the horse's diet. Up to 25 percent of a horse's feed can be beet pulp. It is low in crude protein (usually 7 to 10 percent) and high in fiber (around 22 percent).

A common misconception about beet pulp pellets is that they cause **choke**, a condition in which food gets stuck in the horse's esophagus. Actually, choke often is a behavior problem, as it usually occurs in horses that bolt their food (swallow without chewing). Slow eaters seldom choke.

Another common myth about beet pulp pellets is that they expand in the stomach if they are not soaked properly before feeding, causing a horse's stomach to rupture. Studies show that the pellets are safe to feed without soaking as long as the horse has free access to water. Most people still prefer to soak them, because it makes them more palatable.

To soak pellets, place them in a tub and add twice as much water as pellets. You may use warm or cold water, but do not use hot water: it destroys the nutrients. Soak the pellets for at least 2 hours or until they no longer look like pellets. Soak only enough pellets for one feeding. If they soak for over 12 hours, they ferment and are unpalatable to the horse.

Beet pulp pellets often help add and keep weight on hard keepers. They are also a good supplement for poor-quality hay. Horses with dental problems often do well on beet pulp pellets, because they are easy to chew. They are not a good choice for horses doing strenuous work.

## SUPPLEMENTS

Add supplements to your horse's feed only when something is missing from its diet. Use them only on the advice of a veterinarian. Feeding unnecessary supplements can disrupt the balance of vitamins and minerals and damage the horse's health. If the horse cannot rid itself of the excess nutrients, they can build up to toxic levels in the body. They are also fairly expensive.

Common protein supplements are soybean meal, linseed meal, cottonseed meal, and brewer's grain. Common fat supplements are rice bran, flaxseed, and vegetable oil.

### SOYBEAN MEAL

Soybean meal is the most common protein supplement. At 44 percent protein, it helps meet the protein requirements of foals and lactating mares without adding too much bulk. One to 2 cups twice a day should supply what

they need. Soybean meal contains lysine (lie-SEEN), an amino acid which affects growth. Be sure adequate calcium and phosphorous are available also.

### LINSEED MEAL

This protein supplement has laxative qualities. Linseed meal averages 35 percent protein, but it is less digestible than soybean meal, so more must be fed. It is deficient in lysine and should not be the only protein supplement given to mares and foals.

Modern solvent processing techniques have greatly reduced the fat content. Only the old "expeller" process leaves 10 percent fat, which adds gloss to the coat.

### COTTONSEED MEAL

This supplement averages 41 to 48 percent protein. It is rich in phosphorous and low in lysine. It is not popular as a horse feed, because certain seeds may contain a toxic substance.

### BREWER'S GRAIN

Brewer's grain is the mash removed from malt when making beer. It is palatable and nutritious, containing around 25 percent protein, 13 percent fat, and many B vitamins.

### RICE BRAN

Rice bran has up to 20 percent crude fat. It is a popular fat supplement and an excellent source of vitamin E. Rice bran can help a horse maintain weight and give it a sleek, glossy coat. It is not as messy to feed as vegetable oil, and it keeps longer. It is also highly palatable.

A drawback to rice bran is that it can create a calcium-phosphorous imbalance. Many manufacturers add calcium to the rice bran to help maintain the proper balance. To reduce the chance of mineral overload, do not feed more than 2 pounds per day.

### FLAXSEED

These small, hard seeds must be ground, cooked, or soaked in water so the horse can digest them. Flaxseed has a high concentration of omega-3 fatty acids which the horse cannot produce on its own. It is high in soluble fiber which gels in water and is thought to reduce the risk of sand colic. It is also a good source of vitamin E.

### VEGETABLE OIL

This is probably the most common fat supplement. It is added as a top dressing to grain rations to give more sheen to a horse's coat. Do not feed more than 2 cups per day. Corn, soybean, and safflower oils are commonly used. Oils can turn rancid if they are stored too long.

## MIXED AND COMPLETE FEEDS

### MIXED FEEDS

Mixed feeds are produced commercially for convenience, and they are more expensive. Grain mixes are often made of corn, oats, and barley, so horse people call them C.O.B. **Dry C.O.B.** contains just these grains; **wet C.O.B.** has molasses added.

Molasses is a byproduct of processing sugar. It is used mostly as an appetizer (it can help a horse eat grain with medication or supplements added) and to bind together mixes which tend to be dusty. Avoid molasses content higher than 5 percent. Molasses is quickly converted to sugar in the horse's foregut, and too much can cause digestive and performance problems.

The ingredients and nutrient content in mixed feeds are on the feed tag as required by law. Buy only the type that fits the needs of your individual horse.

### COMPLETE FEEDS

Complete feeds are hay and concentrates mixed in one. They can be helpful to horses with dental problems, as they are easier to chew.

Complete feeds meet the nutritional needs of a horse as well as hay does, but they do not have many of the benefits. Since the horse chews less, there is less saliva mixed in with the swallowed feed. The chemicals in saliva act as a buffer against stomach acids and lessen the risk of ulcers. Horses also spend less time eating complete feeds, so they are likely to become bored and develop stall vices or other behavior problems.

There are many types of mixed and complete feeds designed for horses with specific needs (such as senior or young horses and pregnant mares).

## FEEDING YOUR HORSE

Remember that horses evolved as grazing animals and have relatively small stomachs. To stay healthy, they need to eat frequent small meals. Feed your horse at least twice a day, giving approximately half of the day's ration at each feeding. Feed hard-working horses most of their hay at night when they have plenty of time to eat it.

Feed on a regular schedule, leaving at least an hour between feeding and exercise. Horses are easily upset by changes in routine, so feed your horses at the same time every day, including weekends and holidays. If you feed twice a day, space the feedings as close to 12 hours apart as possible.

With both hay and grain, make sure you feed by **weight** and not by **volume**. A **flake** of hay could weigh from 2 to 10 pounds. A **can** of grain could be 2 pounds of oats or 5 pounds of corn, depending on the size of the can and the quality of the grain. You can use the flake and can to measure feed as long as you have weighed it first to get an average.

If it is practical, feed each horse individually. That way there will be no competition for food. Timid horses will get their share, and more aggressive horses will not eat more than they should.

A horse that bolts its food (swallows without chewing) is prone to choking. Slow the horse's eating by adding rocks or salt blocks to the feed box.

If you change your horse's feed, it is critical to do it gradually. A horse's digestive system cannot handle sudden changes, and colic can be the result of a change made too rapidly. Take at least several days and up to 2 weeks to switch from one type of feed to another or to move a horse on and off pasture. Slowly increase or decrease the amount fed, as well. When the amount of work or exercise changes, adjust the feed ration, too.

## AMOUNT TO FEED

The amount of feed a horse requires varies greatly. When determining how much to feed your horse, consider the following factors.

### SIZE

Feed a horse approximately 2 percent of its body weight per day. For example, a 1,000-pound horse would require about 20 pounds of feed with no more than 0.5 percent concentrates. You can use a heart girth measuring tape, available at most feed stores, to help estimate your horse's weight.

#### ESTIMATED WEIGHT ACCORDING TO HEART GIRTH

Girth length	59	62%	65%	66%	70%	72½	77%
Weight of horse (lb)	600	700	800	900	1,000	1,100	1,200

### AGE

A horse's age determines how much as well as what type of feed you should use. Young horses need more protein for growth, while older horses need feed that is easier to digest.

### WORK

The harder a horse is worked, the higher its nutritional requirement. An **idle** horse is seldom used. **Light use** is from once a week up to 3 hours daily without stress. **Medium use** is 3 to 5 hours daily for light showing, pleasure,



or trail riding. **Heavy use** is showing or racing full time, or working 5 to 8 hours daily.

## PARASITES

Both internal and external parasites can affect how much feed a horse needs. Horses on good deworming programs require less feed. Horses whose intestines have been scarred by parasites require more feed because they absorb fewer nutrients.

## OTHER

Other factors that affect how much to feed include:

- Time of year (more feed is required in the winter)
- Condition of the horse's teeth
- Temperament of the horse
- Breed of horse
- Amount of grazing the horse is allowed
- Environmental factors such as heat, wind, and moisture
- Vices such as cribbing or stall weaving (require increased nutrition)
- Horse is an **easy keeper** (requires less than the average amount of feed)
- Horse is a **hard keeper** (requires more than the average amount of feed)

Check your horse's body condition often to be sure it is maintaining a healthy weight. Never feed your horse more than it needs. Too much weight puts strain on all the body systems, leading to heart, respiratory, and digestive illnesses. The risk of lameness also increases with excess body weight. A good rule of thumb is that you shouldn't be able to see a horse's ribs, but you should be able to feel them.

## HENNEKE BODY CONDITION SCORING SYSTEM

One way to determine the condition of your horse is with the Henneke Body Condition Scoring System. This system, accepted in a court of law, was developed in 1983 by Don Henneke, Ph.D. and is now used almost universally. The Henneke scores have replaced subjective terms such as "skinny," "fat," "emaciated," or "plump."

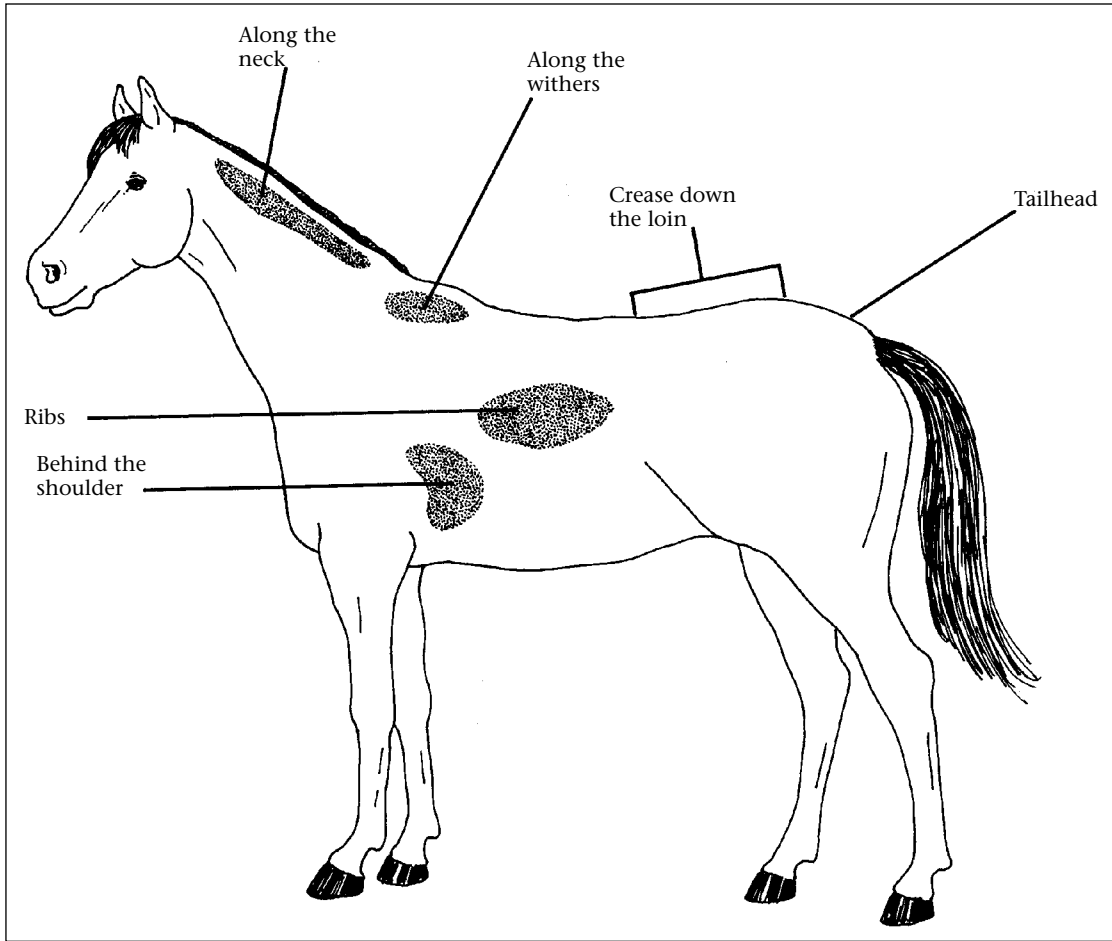
The Henneke system uses both visual appraisal and feel. Six parts of the horse are rated on a scale of 1 to 9: the neck, withers, shoulder, ribs, loin, and tailhead (see illustration on next page).

A score between 4 and 7 is acceptable, with 5 being ideal. A score of 1 is poor (emaciated), and a score of 9 is extremely fat (obese).

## Score descriptions

- 1. Poor**—Emaciated. Prominent spinous processes, ribs, tailhead, and hooks and pins. Noticeable bone structure on withers, shoulders, and neck. No fatty tissues can be palpated.
- 2. Very thin**—Emaciated. Slight fat covering over base of spinous processes. Transverse processes of lumbar vertebrae feel rounded. Prominent spinous processes, ribs, tailhead, and hooks and pins. Withers, shoulder, and neck structures faintly discernible.
- 3. Thin**—Fat built up about halfway on spinous processes; transverse processes cannot be felt. Slight fat cover over ribs. Spinous processes and ribs easily discernible. Tailhead prominent, but individual vertebrae cannot be visually identified. Hook bones appear rounded, but easily discernible. Pin bones not distinguishable. Withers, shoulders, and neck accentuated.
- 4. Moderately thin**—Negative crease along back. Faint outline of ribs discernible. Tailhead prominence depends on conformation; fat can be felt around it. Hook bones not discernible. Withers, shoulders, and neck not obviously thin.
- 5. Moderate**—Back is level. Ribs cannot be distinguished visually, but can be felt easily. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.
- 6. Moderate to fleshy**—May have slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along the sides of the withers, behind the shoulders, and along the sides of the neck.
- 7. Fleshy**—May have crease down back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Fat deposits along withers, behind shoulders, and along the neck.
- 8. Fat**—Crease down back. Difficult to palpate ribs. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulder filled in flush. Noticeable thickening of neck. Fat deposited along inner buttocks.
- 9. Extremely fat**—Obvious crease down back. Patchy fat appearing over ribs. Bulging fat around tailhead, along withers, behind shoulders, and along neck. Fat along inner buttocks may rub together. Flank filled in flush.

## HENNEKE BODY CONDITION SCORING CHART



# GROOMING

Grooming is an important part of a horse's health care. Daily grooming cleans the hair, stimulates natural oils which make the coat shine, and lessens the possibility of skin diseases and parasites. Vigorous massaging improves the condition of muscles. Injuries can be found and treated promptly.

Follow these safety guidelines at all times when working around horses:

- Speak to the horse before touching it to avoid startling it or getting kicked.
- Never stand directly behind a horse to groom. To brush the tail, stand near the point of the buttock, to the side and facing the rear. Hold the tail and bring it around to you.
- Pick up all grooming equipment and do not leave anything in the stall.
- When tying a horse, always use a halter and quick-release knot (or panic snaps on cross ties). Tie to something that is safe, secure, and solid (never to fence board, wire fences, gates, wobbly or rotten posts, cars, machinery, etc.).
- Stay behind the forelegs (because a horse may strike) and in front of the hind legs (so you have less chance of getting kicked).
- Walk close around the hindquarters, keeping your hand on the horse and talking so it knows you are there.
- Have at least a 90-degree angle between the horse and the tie point so that you won't get pinned if the horse suddenly moves over.
- Never walk under a horse's head or neck when it is tied. The horse may pull back and lunge forward, pinning you against the tie rail, fence, or wall.
- Never crawl under a horse.

## GROOMING PROCEDURE

Use grooming tools in the following order:

1. Curry comb
2. Dandy brush
3. Body brush
4. Mane and tail comb
5. Hoof pick
6. Cloth

Begin grooming at the horse's left (**near**) shoulder. Depending on how dirty the horse is, you may start with the curry or the dandy brush. First clean the neck, then the back, girth, barrel, and finally the hindquarters and legs. It is very important to clean the back and girth area so the horse won't get sores from the saddle and the girth.

Repeat the process on the right (**off**) side.

When the horse is mostly clean, brush its entire body with the body brush. Then brush or comb the mane and tail.

Next, use a **hoof pick** to clean out dirt and debris from each hoof. Always work from heel to toe. Begin by running the pick down the grooves on each side of the frog. Then run the pick around the inside rim of the shoe to clean off the sole. Gently clean the cleft in the center of the frog. It's a good idea to use a brush to clean off the sole thoroughly. Not only does this remove any remaining bits of dirt, but it allows you to inspect the foot for signs of bruising, thrush, cracks, punctures, or abscesses. When you are done cleaning a hoof, be sure you set the foot back down. Do not just drop it.



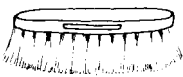

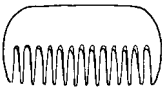

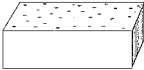


Here is a safe and easy way to pick up a horse's foot. Approach the horse's shoulder diagonally, and talk to make sure your horse knows you are there. To pick up a front foot, stand beside the shoulder, face the rear, and place your nearer hand on the horse's shoulder. Run the other hand gently but firmly down the front of the leg and grasp the fetlock. Squeeze in with your thumb and forefinger while lightly pushing on the horse's shoulder to force its weight onto the opposite leg. Pick up the foot and support it on your knee.

To pick up a rear foot, face toward the rear with the inside hand on the point of the hip. Run the other hand down the back of the leg and grasp the cannon just above the fetlock. Push the horse's weight onto its opposite leg and squeeze with your hand. Pick up the foot, lifting it forward. Then step to the rear, bringing the hoof straight back. Avoid pulling the leg out to the side.

Finish grooming by running over the horse's entire body with a soft cloth.

Wash grooming equipment with soap and warm water often enough to keep it clean. To avoid spreading skin diseases, don't lend or borrow tools. If you have to share tools, disinfect them before using them on another horse.

## GROOMING CHART

TOOL	ILLUSTRATION	USE	HOW TO USE IT
Curry comb		To remove excess mud and loosen matted dirt; to groom horses that have long, thick coats; to remove excess hair; to clean body brush	Use metal curry combs gently in the direction the hair grows. Use rubber curry combs in a vigorous circular motion to massage and lift out dirt. Do not use curry combs on fine-skinned or recently clipped horses. Do not use curry combs on the head, below the knees or hocks, or on other bony areas.
Dandy brush		To remove mud, caked-on dirt and sweat, and sweat marks	Use with short, firm strokes in the direction the hair grows, flipping the dirt up from the skin. Can use on the legs and heart girth. Use gently on the flanks, between the legs, behind the elbows, and on the pasterns. Do not use on the face.
Body brush		To pick up surface dirt left behind; to clean the head	Use gently in the direction the hair grows. May be used on the head.
Hoof pick		To clean out the feet and remove stones and caked-in dirt from the frog	Work from the heel to the toe. Thoroughly clean the cracks between the frog and the bars.
Mane and tail comb		To remove tangles in the mane, forelock, and tail	After separating tangles with your fingers, start at the bottom of the hair strands and gently work upward. A coat dressing helps separate tangles without breaking hairs.
Grooming cloth		To bring out the shine and catch any remaining dust for a final polish	Wipe in the direction the hair grows.
Sponge		To wipe horse's eyes, inside of ears, and nostrils; clean under the tail, wipe sheath or udders	
Shedding blade		To remove shedding hair (smooth side may be used as a sweat scraper)	Using two hands, slide the serrated side of the blade in the direction the hair grows. Use gently over bony areas.
Sweat scraper		To remove excess sweat or water after bathing a horse	Hold the side against the horse and slide downward, forcing the water to slide off. Do not use below the knees or hocks, and use gently over bony areas.

## BATHING

Washing a horse—either with or without soap—removes dirt, stains, and sweat that cannot be removed by grooming. Don't shampoo too often, because you might remove protective hair and skin oils. Use a livestock shampoo or mild nondetergent soap to avoid removing the horse's natural oil.

Wet the horse thoroughly all over with a hose or sponge. Use a sponge on the head; pinch the ears shut (if necessary) to keep water out. You may apply shampoo directly to the coat or mix it in a bucket. Scrub the horse with a sponge or a soft brush. Rinse thoroughly.

Wet and shampoo one section at a time if the horse is drying too fast.

Carefully wash out a gelding's sheath with a hose to remove dirt and shavings that can cause urinary problems. Sponge a mare's udder with soap and water. Soap irritates the tender skin; use a mild soap, and be sure to rinse well.

Wipe off excess water with a **sweat scraper** or the smooth side of a **shedding blade**, using long sweeping strokes. Do not scrape the head or legs. Some coat dressings are sprayed on a wet coat, while others are for use after the horse is dry. Avoid oily dressings; they attract dust. Dry the horse with towels or a cool air dryer. Walk the horse in the shade until it is completely dry (the sun "burns" or curls wet hair). Use a light stable sheet to keep the horse from getting chilled in cool weather, and do not bathe a horse in cold weather.

# CLIPPING AND TRIMMING

For neat appearance and showing, long hairs usually are clipped from the muzzle, ears, jaw, fetlocks, and bridle path. Different breeds have different clipping requirements, and you may trim your horse according to its breed type.

Bathe and dry your horse thoroughly before clipping. Start practicing a month or more before a show to accustom your horse to the clippers. Grasping an ear may quiet an uneasy animal. Place a firm hand near the area to be clipped to reduce sensitivity.

You need electric clippers, hand clippers, or a comb and a pair of sharp fetlock scissors with curved blades. Electric clippers are easiest to use and give the best results; but you can do a fairly good job with scissors, a comb, and a lot of patience.

The following clipper blades are recommended:

- #10 for general clipping
- #15 for finer clipping
- #40 (surgical blade) for “sharper” ears and bridle path

Have clipper blades sharpened periodically. Use a lightweight oil or kerosene on the blades before, during, and after clipping for a painless, smooth job.

If you use scissors, lift the hair with a comb and then snip it off to give a smoother surface and protect the horse from an accidental jab. Hand clippers are hard to operate, tiring to use, and do not blend hair well.

## MUZZLE

If you decide to remove the whiskers, first use the #10 blade. You then can clip the muzzle more closely with a #40 blade or finish carefully with a safety razor. It is not required that you remove the whiskers completely.

If your horse is pastured most of the time, it is best to leave whiskers about 1 inch long. Never clip the eyelashes or the hairs inside the nostrils. These are essential for the horse's safety and comfort.

## EARS

Hold an ear in one hand and clip the outer edges. Clip downward on the upper part and upward along the lower curve of the ear. To leave a natural point, do not clip the tips.

Trim the inner ear even with the edges to give a neater appearance without removing the inner ear hair. If you clip the inside of the ear, first put a large piece of cotton in the ear to keep hair from falling down inside. Brush the inside of the ear clean before removing the cotton.

Horses kept on pasture either need the hair left in the inner ear or a good insecticide to protect them from flies and gnats.

## JAW

Trim the long hair between the jaws and under the throat closely. Use a #10 blade and clip against the direction of the hair growth. Do not clip the cheek or jowl, because this changes the color of the hair.

## LEGS

There are two ways of clipping legs: trimming and booting-up. **Trimming** is done in the direction of the hair growth, and **booting-up** goes against the hair growth. If the horse does not stand still, a helper could pick up the opposite foot to help prevent the horse from moving.

### TRIMMING

(#15 blade recommended)

Trim excess hair from the lower legs by pointing the clippers down and running them lightly and evenly down the leg. Repeat several times, being careful to lift the blades gradually at the end of each stroke. This procedure thins and removes excess hair, but does not change the color of the clipped areas.

To trim the fetlocks, pick up the hoof and run the clippers around and under the bulge of the fetlock joint.

Reverse the clippers and trim the hair at the coronet band by clipping upward, making an even edge around the hoof.

### BOOTING-UP

(#10 blade recommended)

Clip against the direction of the hair, blending carefully below the knee and hock. This is often done on white legs.

Carefully peel or cut off **chestnuts** (the horny, insensitive growths found on the inside of the legs above the knees and below the hocks). They are softer and easier to trim after bathing. Trim off **ergots** (small, horny growths on the back of the fetlocks) close to the skin (use scissors) to allow close clipping of the fetlock hair.

## TRIMMING AND GROOMING BREED PREFERENCE OPTIONS

BREED	SET-UP	TRIMMING AND GROOMING PREFERENCES
American Saddlebred	Stretched	Pleasure horses: manes and tails long and natural. Braiding optional (forelock and first lock of mane with ribbons).
Andalusian	Squared	Minimum clipping. Bridle path no more than 1 inch.
Appaloosa/P.O.A.	Squared	Clear hoof polish only. See Western or Hunter type for more information.
Arabian/part Arabian	Hind: one forward, one behind	Bridle path 6 to 8 inches. No braiding except hunt seat.
Connemara	Squared, not stretched	Usually shown as typical Hunters, braiding optional. Bridle path 1 inch. Ears need not be trimmed inside.
Hunter	Squared	Mane pulled 3½ to 4½ inches, generally braided with conservative or matching color yarn. Scalloped or button braids optional. Forelock braided. Bridle path no longer than 1 inch. Tail long and full. Braiding tail is optional, but never braided unless mane and forelock also are braided.
Miniature Horse	Squared, not stretched	No braiding. Body clipping common.
Missouri Fox Trotter	Squared	Bridle path according to conformation. Forelock and first lock of mane braided with ribbon.
Morgan	Slightly stretched	Bridle path 6 to 8 inches. No braiding except hunt seat.
Mustang	Squared	Natural appearance is desired. Muzzle, ears, and feathers are not clipped. Minimum bridle path (up to 2 inches). No hoof black.
Paso Fino	Squared	Bridle path not required, but may be up to 4 inches. Face, ears, and legs trimmed, but natural look is desired. No braiding.
Peruvian Paso	Squared	Bridle path not required, but may be up to 2 inches. Natural appearance is desired. Roach mane is acceptable. No hoof black (clear only).
Quarter Horse/Paint	Squared	Bridle path length depends on personal preference. Mane usually shortened, may be banded for Western or English, or braided for English.
Saddle Type	Squared or stretched	Natural long mane. Tail long, full, and natural.
Shetland Pony	Stretched	Bridle path 4 to 6 inches. Forelock and first lock of mane braided with ribbon. Body clipping common.
Tennessee Walking Horse	Stretched	Bridle path 6 to 8 inches. Forelock and first lock of mane braided with ribbon.
Warmbloods	Open, so all four legs can be viewed from the side Balanced on all four feet	Bridle path 1 to 2 inches. Braided mane and forelock optional.
Welsh Pony	Squared, not stretched	Manes and tails natural. Minimum bridle path. Full feathers allowed in Division A. Braiding optional for Division B. Ears not trimmed inside.
Western/Stock Type	Squared	Mane may be natural, roached, or pulled to 3½ to 4½ inches, and may be banded. Tails natural.



## BRIDLE PATH

Use a #15 or #40 blade (#40 gives the neatest, closest trim). Clip forward toward the poll to keep the bridle path from getting longer each time it is trimmed in case the clippers slip. The length of the bridle path should be a minimum of 1 inch or per breed standard.

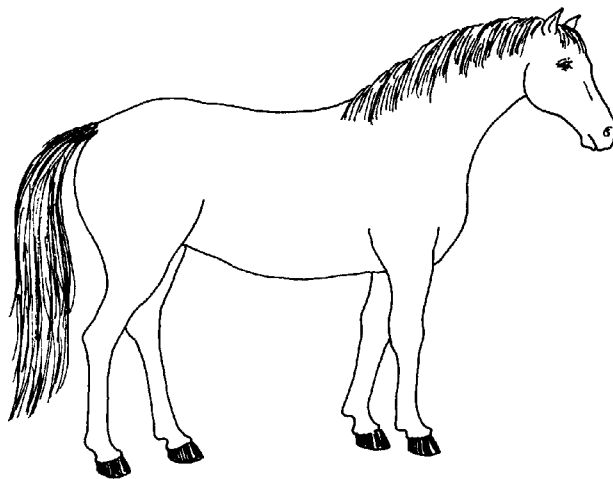
## BODY CLIPS

A pastured horse needs a natural winter coat. However, a hard-working horse's coat becomes soaked with sweat and can take hours to dry. In cold weather, a wet coat quickly conducts heat away from the horse's body, which can lead to chills. A body clip of some type may be a good solution.

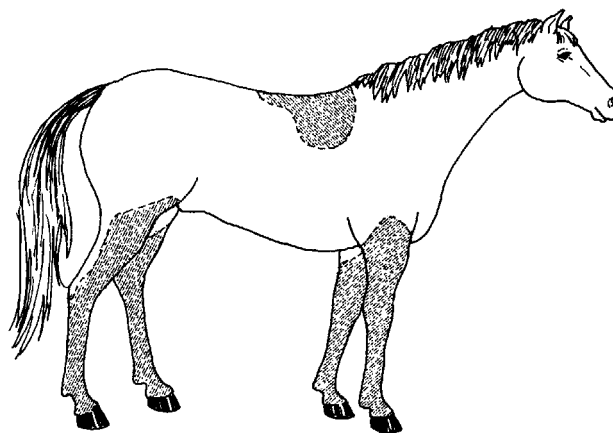
A clipped coat is a bit shorter than summer length, so most horses with body clips require a blanket for protection from cold. With a partial clip, the horse does not get as hot and dries more quickly, but still has quite a bit of its natural coat, so it may not need a blanket.

To avoid needing to clip twice, wait until the horse sheds its summer coat and establishes its winter coat. If you clip in the spring, do it before the horse begins to shed. Otherwise, you'll clip off the ends of the new summer coat and it won't be as rich and glossy. A full clip usually grows out in about 3 months.

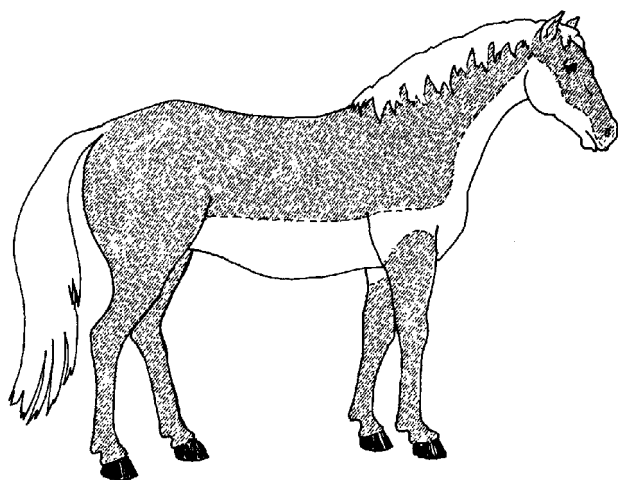
There are many types of body clips. The illustrations here and on the next page show the most common ones.



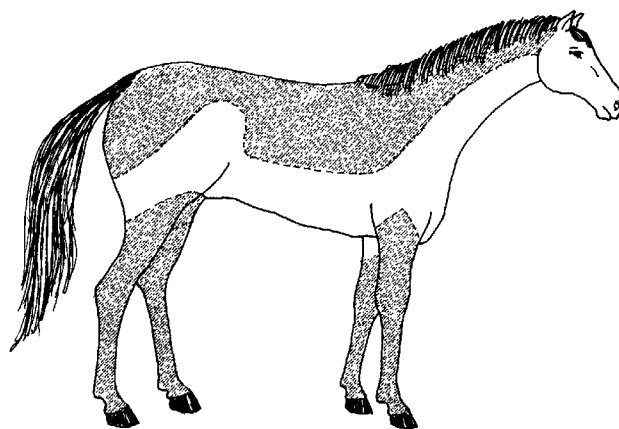
**Full clip**—An all-over body clip.



**Hunter clip**—The body and head are clipped, but long hair is left on the legs and on a **saddle patch** (in the shape of the saddle), which protects the skin of the back.

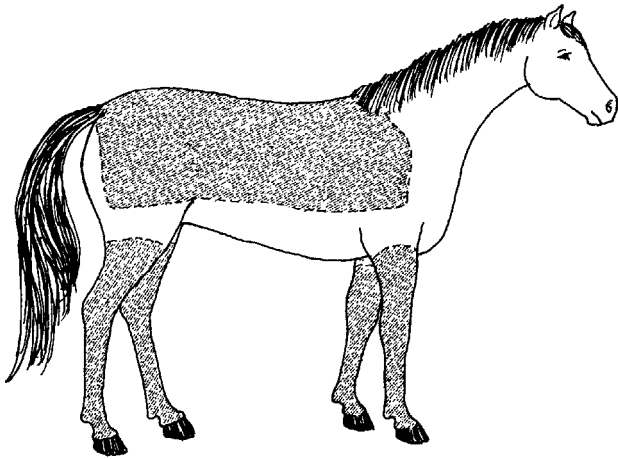


**Trace clip**—A partial clip of the bottom of the belly and chest up to about the height of the traces of a carriage.

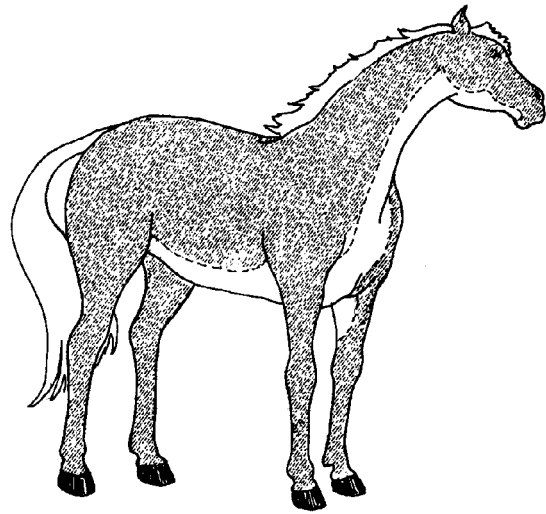


**High Trace clip (or racing clip)**—A partial clip of the bottom of the belly and chest and at least part of the neck and shoulder. Brings the line of the clip higher up on the belly, with a keyhole running up into the flank and hindquarters.

## BODY CLIPS, CONTINUED

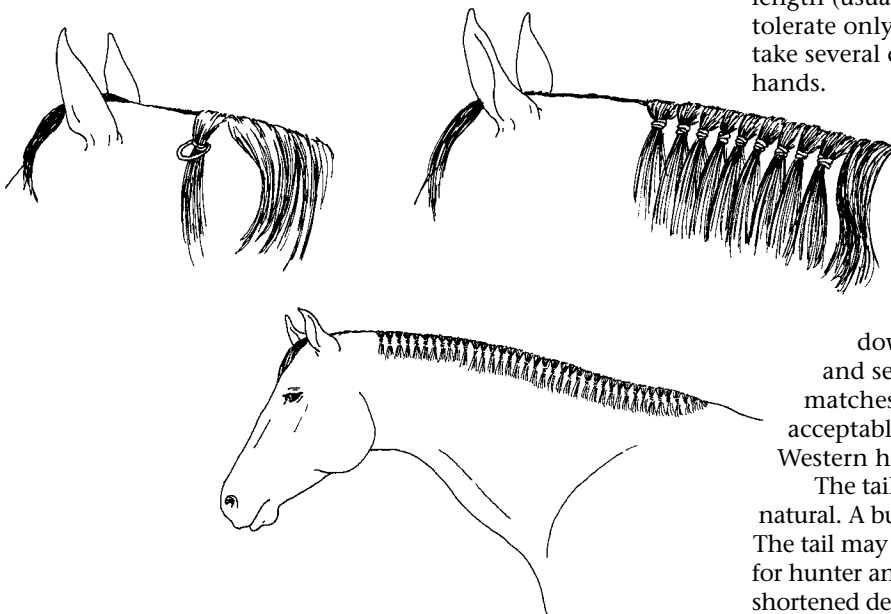


**Blanket clip**—Removes long hair from the neck, chest, and belly and sometimes the legs, leaving a neatly squared-off blanket of long hair that protects the muscles of the back and loins.



**Strip clip**—The most conservative clip. Only a strip of the underside of the neck, chest, and belly are clipped, leaving the horse with almost all of its natural coat while still allowing it to cool faster.

## BANDED MANE



## MANE AND TAIL

A mane's length is determined by breed type and use. Manes of stock horses and Hunters are usually thinned and shortened, or **pulled**. Natural manes and tails often need to be evened or thinned also. Scissors are not recommended for shortening manes.

To pull a mane, hold the ends of a small patch and push the shorter hairs up with a comb, then pull out just a few long hairs at a time. Brush it out frequently to check the length (usually 4 to 6 inches). The horse may tolerate only short sessions, and the job may take several days. Wear gloves to protect your hands.

Train the mane to lie smoothly on one side. **Banding** is one way to do this. To band a mane, pull it to 3 to 4 inches in length. Wet the hair and part it into small sections about  $\frac{1}{2}$  inch wide. Comb each section

down flat against the side of the neck and secure it with a rubber band that matches the color of the mane. Banding is acceptable in the show ring for hunter and Western horses.

The tail usually is left long, full, and natural. A bushy tail may be thinned and pulled. The tail may be **banded** (cut straight across) for hunter and dressage mounts or clipped or shortened depending on use and/or breed type.

# BRAIDING

Hunters are traditionally braided for neatness and to enhance the horse's conformation. Banding is not considered a traditional hunter braid.

Generally, if the mane is braided, the tail is braided as well, even though it is not required. It is not acceptable to braid the tail without braiding the mane.

Braiding is not allowed in saddle seat, but you may tie a ribbon by the bridle path.

Banding is acceptable in Western, though some breeds prefer long manes. It is a good idea to check the breed standard for the breed you are showing.

## MANE

Braiding can improve the appearance of a horse with a full or coarse mane, but it must be done correctly. It is better not to braid a mane than to do it sloppily.

Thin and shorten the mane first. Ribbon or thread are recommended instead of rubber bands. Remove the braids as soon as possible to avoid breaking off hairs.

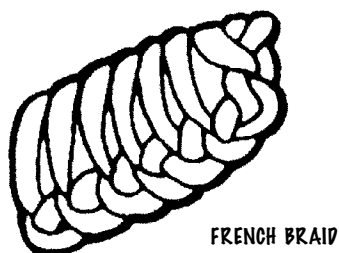
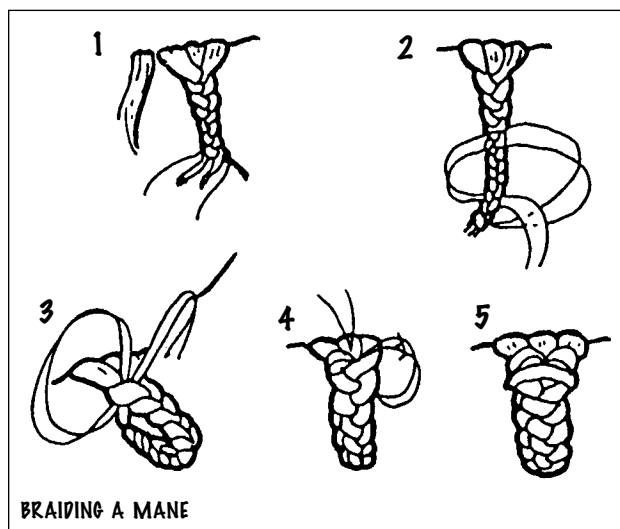
Separate a 2- to 4-inch segment of mane and wet it with a sponge, then comb. Separate the segment into three equal strands and braid two-thirds of the way to the end. Keep the braid very tight, especially at the beginning.

Use the illustration at right to help you.

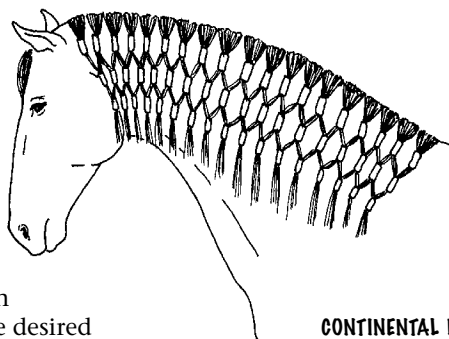
1. Lay a 10-inch piece of yarn behind the braid. Add the ends to two of the strands of hair and keep braiding.
2. Separate yarn ends from the hair, wrap them around the braid, and pull through tightly.
3. Thread both yarn ends through a needle. Sew up through the top of the braid, around the left side, and wrap up through again.
4. Repeat on the other side of the braid.
5. Separate yarn ends, wrap them around, and tie them in the center. Cut the ends of the yarn short.

You also can fasten braids with two rubber bands (use size #8).

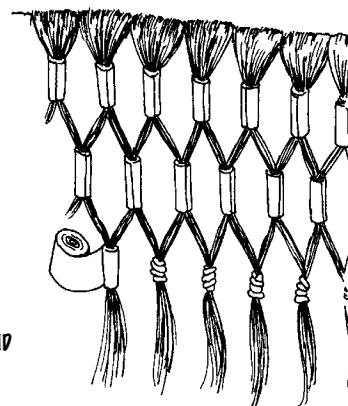
Other braiding techniques include scallops, sewn-in button braids, Continental braiding, and French braiding. French braiding is done on horses with long manes that you don't want to cut or pull short. Start a French braid with a 3-inch strand. When the braid has reached the desired length, begin adding a 1- to 2-inch section of mane each time you cross the left side of the

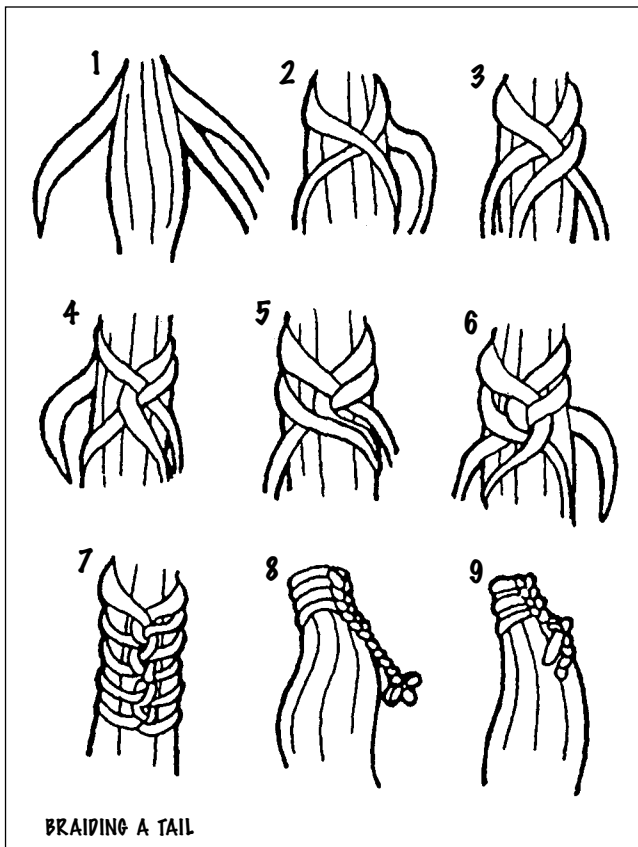


FRENCH BRAID



CONTINENTAL BRAID





braid to the center. Secure the braid with a rubber band or yarn. To get a raised look, go under each strand as you braid instead of over.

## TAIL

Tails are braided for neatness and to show off the hindquarters and legs. It gives the horse a finished appearance. To get a raised effect, go under each strand as you braid rather than over.

To finish the tail, braid out about 5 or 6 inches, then double the braided end up with the unbraided section on top pointing up the tail bone. Put a rubber band around the doubled-back braid, then turn the braid under and slide it up underneath the tail braid until just a small braid is still showing. Finally, put a rubber band around the small loop at the bottom of the tail braid.

The pinwheel method is another way of finishing the tail braid.

# WEATHER AND YOUR HORSE

Extreme weather conditions put stress on a horse and can affect its health. You need to know what problems to look for in summer and winter and how to prevent those problems.

## COLD WEATHER CARE

When the weather turns cold, you'll need to make adjustments to your horse's routine care. Though you may not enjoy spending time in the cold and wet, remember that your horse is depending on you to keep it healthy.

### SHELTER

Your horse must have shelter where it can dry off each day and be out of the wind. If your horse has proper shelter, its winter hair coat will generally keep it warm enough. The hairs grow downward to make an insulating layer of air. When the horse gets cold, special muscles make the hair stand up, which increases the air layer and the insulation. A horse produces more body oils in the winter, which help the coat shed water. So, if the horse is dry and out of the wind, it can stand subfreezing temperatures easily.

But when the horse gets wet, its hair flattens, and the insulating air layer is lost. Wet hair also conducts heat away from the horse's body faster than dry hair, which may cause the horse to get cold. If your horse is shivering, has a tense body or clamped tail, or its ears feel cold, it is probably too cold.

Wind also affects the insulating air layer in a horse's coat by blowing the hairs apart. This greatly increases the loss of body heat. Wind is often more of a problem than rain. A horse can stand being in the rain for awhile as long as the wind is not blowing.

While shelter is important, be sure your horse is not shut up in an airtight, heated barn. Such a place is a haven for dust, molds, and ammonia fumes, all of which are extremely harmful to the horse's health. The horse must have fresh air, or it runs a high risk of developing respiratory problems.

### FEEDING

In cold weather, a horse needs more energy to keep warm, so its nutritional needs increase. Feeding your horse properly during

winter not only prevents weight loss and loss of conditioning, but helps prevent colic and laminitis. A general rule of thumb is to increase the feed ration 10 percent for each 10°F below freezing.

A common mistake is to increase the amount of grain, but a horse needs more forage in cold weather, not more grain. The fermentation of forage during digestion produces more and longer-lasting heat than that produced from the digestion of grain. Therefore, giving your horse more hay will help it keep warm, but feeding it extra grain will not.

Horses often are not worked as hard in the winter, so they do not use as much energy. Since grains are generally high in carbohydrates (the source of most energy), you must decrease the amount fed or your horse may become too energetic and less manageable. The common term for this is **hot**.

If your horse has a thick winter coat, it is important to monitor its weight closely. It is often hard to tell through all the hair if the horse is losing weight. Once a week, feel for its ribs.

Remember that adequate salt intake is just as important in cold weather as in the summer.

### WATERING

Wintertime watering can be a challenge. A cold horse does not like to drink cold water and may drink very little if the water is icy. Though they are not losing water from sweating, horses still need plenty of water. Two common results of a horse's not drinking enough are dehydration and impaction colic.

Make sure your horse gets enough to drink by providing clean, fresh water free of ice. Inexpensive stock tank heaters can keep your water ice-free (be sure to protect the cord from chewing). It also helps to remove any chunks of ice from water sources and add hot water to buckets to warm the water already there.

Do not expect your horse to get water by eating snow. A horse would have to eat about six buckets of snow to equal drinking one bucket of water. Even if there is lots of snow around, you must still provide drinking water.

### BLANKETING

Most horses do not need to be blanketed. A normal horse's winter coat keeps it as warm as a top-quality blanket. In fact, blankets may be counterproductive. The weight of the blanket



flattens the hair, eliminating the air layer and the horse's natural insulation.

One of the main concerns with blankets is overheating. If the horse gets too warm, it sweats under the blanket and becomes wet. This can lead to chills and illness.

If you choose to blanket, change blanket weight with changes in temperature, both from day to night and from day to day. It is always better that a blanket be too light than too heavy. Check for overheating by feeling for sweat under the blanket near the girth and the flank.

Often people blanket their horse more as a convenience to them than as a help to the horse. Make sure you have a good reason for keeping your horse blanketed all winter.

When deciding whether or not to blanket your horse in the winter, take the following into account:

**Horse's condition.** A healthy, conditioned horse is less likely to need blanketing. An older horse, an underweight horse, or a horse with a health problem may require blanketing.

**Horse's activity level.** If your horse is not being ridden much during the winter, don't blanket it. If you are riding daily or showing, you may want to clip the horse, in which case you must blanket it.

**Facilities.** If your horse has adequate shelter, it probably doesn't need a blanket. The more exposure your horse has to wind and rain, the more likely it will need a blanket.

**Expense.** Blankets are expensive. To blanket your horse properly, you will need several blankets of different weights.

**Your time commitment.** Keeping your horse blanketed takes a lot of work. Because blankets flatten the horse's hair, you should groom the horse daily to stir the hair back up. You should remove and readjust blankets at least once each day to check for areas of rubbing, hair loss, or sores. Replace wet turnout blankets with dry ones. Never stall a horse in a wet blanket. Check blankets for damage daily, and clean them several times a year.

All of these things take time. If you cannot commit to changing your horse's blanket at least once a day, you should not blanket at all.

## EXERCISE

Even in winter, daily exercise is important. Horses often are turned out and ridden less in winter. This makes them very energetic when they are turned out, especially if their grain ration has not been reduced. Horses can

hurt themselves if they are too rambunctious, pulling muscles and tendons.

Make sure your horse gets some exercise each day. Warm it up slowly to loosen muscles. The colder the weather, the longer it takes to warm up adequately.

Even more important than the warm-up time is properly cooling the horse down after the workout. In winter, a horse needs to be cooled down gradually and completely to avoid the risk of chills. If the horse is sweaty, rub its coat with a towel to fluff the hair. Keep the horse moving until its hair is dry and its body temperature has returned to normal. If the blood vessels narrow too rapidly, cramps can develop. On the average, during the winter, half of your workout time should be spent cooling the horse down.

If you are riding outside during the winter, remember that footing is often slippery. Frozen ground is hard and can cause bruises to the horse's sole. Abscesses are more common in the winter mud. Snow can pack in shoes, causing lameness. Check your horse's feet often.

## HOT WEATHER CARE

Four common heat-related health problems are dehydration, heat stroke, thumps, and sunburn.

### DEHYDRATION

Dehydration occurs when the horse does not drink enough water to supply its needs. Signs of dehydration include dry, hard feces; dark yellow, opaque urine; and lethargy. In severe cases, colic can occur. The horse may stop sweating, collapse, or die. A slightly dehydrated horse may show few symptoms and be fine if it drinks water. A moderately dehydrated horse may need electrolytes along with water, while a severely dehydrated horse needs veterinary care and may require intravenous (IV) fluids.

To test for dehydration, pinch 1 to 2 inches of skin on the horse's neck, forward of the shoulder. When you let go, the skin should immediately snap back. If it doesn't, the horse is dehydrated. You also can check for dehydration by testing the capillary refill time (CRT). Apply pressure to a spot on the horse's gums for a few seconds. The gum will turn white. When you release the pressure, the gum should return to a pink color within 2 seconds.



## HEAT STROKE

Heat stroke is a serious, often fatal, condition. Signs include hot, dry skin; refusal to move; an increase in the pulse and respiratory rates; weakness; and a temperature of 106 to 110°F. Act immediately; it is essential to lower the horse's body temperature quickly. Call the veterinarian, hose the horse with cold water, and get the horse in the shade. If there is no breeze, cool the horse with a fan.

## THUMPS

Thumps is the common name for synchronous diaphragmatic flutter (SDF), a rhythmic spasm in the flank that twitches in time with the heartbeat. SDF is a sign that the horse is severely dehydrated and low on electrolytes. Immediate treatment is needed. In mild cases, rehydrating the horse and cooling it off will stop the spasms. In more severe cases, a veterinarian may need to administer IV fluids.

## SUNBURN

Appaloosas, Paints, and blaze faces commonly suffer from sunburn, but any pink-skinned areas are vulnerable. Prevent sunburn by keeping horses in during the middle of the day, covering them with a light sheet, or using a sunblock lotion.

## PREVENTION

To avoid heat-related health problems, you may need to shorten the length of your ride, lower the intensity of the workout, or ride early in the morning or late in the evening when it is cooler. The more in shape your horse is, the less likely it is to suffer from the heat. In particular, make sure your horse is not overweight.

The primary way a horse controls its body temperature is by sweating and sweat evaporation. Humid weather reduces the evaporation of sweat. When planning your

riding activity, it is as important to consider humidity as temperature. Use the Heat Stress Index (H.S.I.) to help plan your workouts. To find the H.S.I., add the temperature to the percent of humidity. (For example, if the temperature is 80°F and the humidity is 30%, the H.S.I. would be 110.) Once you have determined the H.S.I., use the following guidelines:

H.S.I.	Guideline
under 120	Ride normally
120–150	Lessen intensity or length of workout
150–180	Use caution; only work lightly
over 180	Do not ride

It is commonly thought that you should not let a hot horse drink water, but dehydration is a much more serious problem than what might happen if a horse drinks while hot. Just be sure that the water is not icy cold, as this may cause colic. Room-temperature water is safe for the horse to drink.

If your horse is extremely hot after a ride, don't be afraid to hose it off with cold water. This does not cause cramping, but cools the muscles and prevents overheating. When you are done hosing, be sure to scrape the water off. If left on the horse, the water quickly heats and causes the horse to become hotter. Walk the horse until it is dry and cool. The slight breeze generated by walking can help sweat evaporate.

When a horse sweats, it loses essential salts and minerals in addition to water. These electrolytes are essential for the proper functioning of muscles and heart. Electrolyte supplements can be added to a horse's water, but the horse must drink enough water for the supplements to work. Also, too many electrolytes can cause as many problems as too few, so make sure your horse needs a supplement before you use one. Most veterinarians recommend that only horses in a rigorous work schedule be given electrolyte supplements routinely.

# TRAILERS, LOADING, AND HAULING

## CHOOSING A TRAILER

Buy a safe horse trailer and keep it in good condition. That way, you and your horse have a better chance of arriving at your destination healthy and happy.

When choosing your horse trailer, consider your horse's point of view. Your horse wants lots of room, light, air, and safety. Be sure the trailer has enough useable space to keep your horse comfortable. Windows or slats and a light-color interior make the trailer more inviting and provide airflow (**ventilation**). Keep the trailer clean, so your horse does not inhale dirt and particles while traveling. Roof vents also help with airflow, and a light-colored roof keeps the trailer cooler.

Consider the design of your trailer. There should be nothing sticking out or sharp-edged that could harm the horse. Posts and dividers should be strong enough for the biggest horse and should have quick releases. Step-ups and ramps should be low to the ground, not slippery, and easy for the horse to negotiate.

Brakes and lights must work. Balls, hitches, and safety chains or cables should be in good repair. Tires should be inflated per manufacturer's instructions. Be sure the trailer tows level, with equal weight on each tire.

Here is a quick checklist of minimum requirements for any trailer:

- Be sure floor boards are in good shape and are supported by the frame of the trailer. Check for any rot.
- Be sure the body of the trailer is firmly attached to the frame.
- Check for wobbly wheels, and be sure all lug nuts and bolts are securely in place. Pack wheel bearings yearly and service grease fittings.
- Tires should be in good repair and inflated properly. Have a spare.
- Door latches must fasten securely.
- All lights and brakes must work properly.
- Be sure the hitch is solid and the ball size correct.
- Safety chains must be secured.
- Be sure the trailer is big enough for the horse you intend to haul.

- Be sure all state requirements for trailer brakes, lights, and registration have been met.
- Be sure your towing vehicle is suitable to pull your trailer when it's at capacity.

## LOADING

Ideally, your horse has been taught to load and unload, every time, any place, under all conditions. Before loading, it is important that your horse respect you from the ground and that you understand safety from the ground.

There are many philosophies on how to load a horse properly and how to train a horse to load. Most include a few simple recommendations. Be patient. Do not get the horse anxious about the horse trailer, and teach the horse to go forward and backward on command. Most agree that inflicting pain is not the best way to train a horse to load. Rather, use some irritation and then relief from the irritation when the horse responds in a positive manner (such as moving forward into or toward the trailer). Before introducing a trailer, you can practice going forward and backward by putting your horse between two logs or two panels.

Practice loading and unloading your horse well in advance of any scheduled event. Trying to load and unload a horse that has not been trained properly can be dangerous for both you and the horse. If your horse has not been taught to load or you are having trouble loading or unloading, don't hesitate to contact a knowledgeable person to help you. There are also many books and videos on the subject. **Never** load your horse in a trailer that is not attached securely to a tow vehicle. An unattached trailer is not heavy enough to balance a horse's weight. As the horse goes in, the rear of the trailer will fall back and become extremely unsafe.

Before you load your horse, you may want to consider a few extra safety precautions. Use a leather halter in the trailer rather than nylon. Leather breaks more easily in case of emergency. Always remove all saddles and tack before loading. Apply shipping boots or wrap

your horse's legs properly to add protection and/or support. Be sure bandages or wraps extend over the coronet bands onto the hoof. They should also cover the heel area. If you are hauling long distances, remove the horse's leg wraps every day to allow for circulation.

Think carefully before using shavings or other bedding on the floor of your trailer. The dust and particles flying about can be a major irritant to your horse. If you use them, you may want to wet them down.

## HAULING

Be sure the trailer is properly hitched, safety chains are attached, and all lights are working properly. If you are pulling a straight load, put a single or the heaviest horse on the left side of the trailer. This gives the horse a smoother and easier ride (because of the crown of the road). Be sure all chains and bars are secured. Tie your horse with enough length that it can move its head, but not so much that it can turn its head around or socialize with the horse next to it. Use a quick release knot or a quick release trailer tie.

The most common reason a horse is difficult to load or haul is poor driving. Keep turns, starts, and stops slow and steady. Drive within the speed limit, and allow extra stopping distance. Look far ahead to avoid emergencies, and drive defensively. Avoid driving so slowly that traffic backs up and drivers behind become impatient. The law requires slow vehicles to pull off the road and allow other traffic to pass.

At every stop, check the horse, gate latches, and trailer hitch before continuing on your trip.

## UNLOADING

Practice leaving the horse in the trailer for a few minutes when you arrive at your destination. This keeps the horse from thinking it should exit the trailer immediately upon stopping.

Check the unloading area for safe footing. Always untie the horse before undoing butt chains, bars, or dividers. Never stand directly behind the horse when unhooking butt chains or bars. Try to keep the horse straight and calm as it exits the trailer. Make the horse back or walk quietly out of the trailer without rushing.

## TRAVELING

Hauling is as much a workout for the horse as an equal amount of ride time. If you are hauling for long stretches of time, it's good to stop every couple of hours to take a short break and offer your horse water. It is not necessary to unload the horse—just a few minutes of rest is enough. Always carry an equine first-aid kit (see "First Aid," page 27) and a water bucket.

No matter where you travel, you are exposing your horse to diseases or viruses. Be sure your horse's vaccinations are up to date, including a recent booster for influenza. If in doubt, check with your veterinarian. If you are traveling out of state, contact your state Department of Agriculture, your state veterinarian, and the state veterinarian of your destination at least 2 weeks in advance to determine what documents, tests, or vaccinations are required and recommended before transport. Common forms required include a health certificate, brand inspection, and bill of sale or registration papers. The destination veterinarian also can inform you of recent outbreaks of disease or other concerns in the area(s) to which you are traveling. Better to be safe than to arrive without the necessary documents and/or vaccinations.

# RAISING A FOAL

A foal project can be challenging and rewarding. Consult libraries, magazines, trainers, veterinarians, and experienced breeders to gain skills and knowledge.

Breeding a mare and raising a foal require a large investment in time and money. Consider the following:

- You may have to change stalls, fences, and equipment to accommodate a foal.
- You'll need special knowledge of nutrition, health care, genetics, and reproduction.
- To choose a stallion, you'll need to know the characteristics desired and the strong and weak features of the mare.
- The mare must be bred and foal at a time that fits into a riding program or activities such as a county fair.
- There will be extra expenses, including the stud fee, board, veterinary care, and feed supplements.
- You will need the skill and knowledge to train a young horse.

## BREEDING

You can improve the odds for getting a satisfactory foal by making a careful study of heredity and reproduction. Proper preparation of the mare helps ensure conception. (The national average of mares bred that produce a live foal is about 60 percent; but, with proper management, it can be as high as 90 percent.)

## HEREDITY

In the body cells of horses, 32 pairs of **chromosomes** carry thousands of pairs of minute particles called **genes**, which are the basic hereditary material. When a sperm or an egg is formed, only one chromosome and one gene of each pair goes into it. After mating and fertilization occur, the 32 single chromosomes from the parents unite to form new pairs. Many combinations are possible.

**Dominant genes** can **mask** (hide) the characteristics of **recessive genes**. For example, if genetically pure black is crossed with pure chestnut, the foal will be black, because black is a dominant color. But, the foal carries a recessive chestnut gene masked by the dominant black gene. There is a 25 percent chance that this black foal will produce a

chestnut foal, but recessive factors make their appearance only when two animals carrying the recessive genes mate.

Color and sex are inherited in a simple manner involving just a few genes, but most characteristics are passed by a combination of many genes. Examples are speed, special gaits, "cow sense," jumping ability, disposition, and size.

The mare and stallion's ancestors and offspring can show whether a desirable characteristic has become dominant. The more often the trait appears in the line, the more dominant it probably is.

The horse's upbringing (**environment**) can also affect the quality of its inherited traits. Maximum development of inherited characteristics such as growth, conformation, or speed depends on proper training and nutrition. In fact, only 15 to 30 percent of the variations among animals may be due to heredity if both parents are of average or better quality. However, when one parent is significantly better than the other, the variation may be as much as 90 percent. While environmental effects are apparent, choosing a superior stallion is still very important.

## STALLIONS

Inspect breeding facilities and observe the condition of all horses. Then, use the following guidelines to choose a stallion (**stud**):

- He should be a purebred animal with a pedigree showing successful performance and halter records.
- He should be a proven producer of uniformly high-quality offspring.
- He should be a superior individual in type and soundness and be typical of current breed standards.
- He must be able to produce qualities the mare lacks and help overcome her weaknesses.
- His conception rate should be high.

The stud fee is a major expense, but a superior stallion can be a good investment in the future desirability of the **get** (offspring). One rule of thumb suggests that a foal's worth is three times the stud fee. Other expenses for the foal (feed, health care, etc.), will be far greater than the stud fee.

After you've chosen the stallion, you'll often have to pay a booking fee as a deposit. Both owners sign a breeding contract that

Covers board fees, veterinarian checks, shoe removal, live foal guarantee, and registration information.

After the mare is bred, you will be given a breeding certificate in order to register the foal. This is an important document, so keep it in a safe place.

## MARES

Characteristics of the **broodmare** (dam), both good and bad, may be passed on to the foal. Analyze the broodmare carefully to avoid breeding to a stallion with the same problems. **It is better not to breed a mare of poor quality or with inheritable unsoundness.** There is no market for inferior foals.

The mare should be of good ancestry, whether purebred or grade.

Most fillies are not bred until they are at least 3 years old. The mare should be fed and exercised to a slightly lean condition. She should be on a deworming program and have up-to-date rhinopneumonitis, flu, tetanus, and sleeping sickness vaccinations. (See “Controlling Internal Parasites,” page 37; and “Diseases,” page 31.)

Spring (from March to June) is the ideal season for both breeding and foaling. However, race and show foals are usually planned for birth as soon as possible after January 1 for maximum development.

Begin to watch the mare for signs of **heat** (the fertile period) several months before breeding, and chart her cycles. The interval between periods averages 21 days but may range from 10 to 37 days. Heat periods average 4 to 6 days but may range from 1 to 12 days. When the mare is “in season,” the external genitals relax and there is a slight mucus discharge from the vagina. She may tease other mares or geldings and seem to desire company. The most noticeable sign is more frequent urination.

Deliver the mare to the breeding farm about a week before the heat period is expected.

## PREGNANCY

After the mare is bred, heat periods stop (though occasionally a mare shows false heat). Usually, the breeder keeps the mare or allows her to return during the next possible cycle to check for pregnancy.

The first check for pregnancy can be done using ultrasound 12 to 14 days after ovulation. A veterinarian can determine pregnancy by making a rectal examination about 40 days after the last service. A laboratory can do blood tests as early as 45 days after breeding.

During the 11-month **gestation period** (pregnancy), mares should be turned out to pasture, where they usually get ample exercise. Exercise stabled mares moderately at least an hour per day until a few days before foaling.

To learn nutrition requirements for pregnant and nursing mares, read the “Feed and Nutrition” section (page 60).

## FOALING

The first sign of foaling is an enlarged udder about 2 to 6 weeks before birth. About 7 to 10 days before foaling, the mare’s buttock muscles near the tailhead sink in and the abdomen drops. The nipples fill 4 to 6 days before foaling, and wax appears on the ends of the nipples 2 to 4 days before birth. As actual foaling time approaches, the vulva becomes full and loose, milk drops from the nipples, and the mare becomes restless. She may break into a sweat, urinate frequently, and repeatedly lie down and get up. Sometimes, though, there are no signs, so be prepared 30 days in advance.

Shortly before foaling, decrease feed and add about ¼ pound wheat bran per feeding.

When the weather is warm, allow the mare to foal in a clean pasture away from other livestock. During bad weather, use a box stall that has been cleaned and disinfected with 4 ounces of lye in 10 gallons of boiling hot water. Use half-strength solution to scrub mangers and grain boxes. Sprinkle the floor lightly with lime. Put down plenty of straw bedding. When foaling begins, someone should be near, but **not in sight**.

In a normal **presentation** (position of foal at birth), the front feet come first with the heels down, and foaling usually takes no more than 15 to 30 minutes. If there is any other presentation, call a veterinarian **immediately**.

Make certain that the newborn foal is breathing and that the membrane has been removed from its mouth and nostrils. Thoroughly soak the navel cord with iodine as soon as possible to help prevent infection. Then let the mare and foal rest for a time. A strong, healthy foal will be on its feet and ready to nurse within ½ to 2 hours after birth.

**Colostrum** (pronounced ko-LOSS-trum) is the concentrated milk secreted by the dam for the first few days after giving birth. It contains antibodies which protect the foal from certain infections and is a natural laxative. Do not reduce the benefits of colostrum by “milking out” a mare before foaling time.

Remove the **afterbirth** (membrane surrounding the foal) from the stall and place it in a bucket so the veterinarian can check it for completeness. The afterbirth is usually expelled within 1 to 6 hours after foaling. If it has not been expelled within 3 hours, call the



veterinarian. Clean and re-bed the stall after the mare and foal are up to reduce the chance of infection.

Give the mare small quantities of warm water. Feed lightly the first few days. A bran mash with a few oats is good. Be observant; if the mare has a raised temperature, call a veterinarian.

If the foal has not had a bowel movement within 4 to 12 hours after birth, and it seems sluggish or fails to nurse, call a veterinarian.

Some foals develop diarrhea 7 to 9 days after foaling when the mare comes in heat. Other causes might be a contaminated udder; nonremoval of fecal matter from the foal; above-normal temperature in the mare; too much feed; or cold, damp conditions. The diarrhea will likely cease on its own; but if it continues, call a veterinarian.

## FOAL CARE

Weather permitting, the best place for a mare and foal is on pasture. When the foal is 10 to 20 days old, it will begin to nibble on a little grain and hay. Place a grain box low for the foal, and place a board across a corner of the stall or pasture which the foal can pass under, but not the mare. Put the foal's hay and grain on the opposite side from the mare.

Many problems are caused by lack of care in the foal's first 2 years. To learn nutrition requirements for foals, read the "Feed and Nutrition" section (page 60).

Some leg problems can be solved by regular, corrective hoof trimming.

Worms are a particular threat to foals, so deworm the mare and foal regularly. The mare can be dewormed when the foal is about 1 week old. She and the foal should be dewormed again 2 months later.

## WEANING

Foals usually are weaned at 4 to 6 months of age. Recent research indicates that late and/or gradual weaning may reduce the development of vices such as pacing and weaving.

If the foal has been eating adequate hay and grain daily, weaning will cause only a slight setback. Cut the dam's ration in half a few days before the separation to start to dry up her udder.

When possible, wean foals in pairs or groups. This helps reduce the trauma of being separated from their mothers.

Move the mare to new quarters, leaving the foal in a familiar place. Some breeders prefer to locate the mare and foal so they can still see each other, to reduce stress in both. Others believe that keeping them out of each other's sight shortens the process.

It usually takes a month to dry up the mare, after which she may be returned to an adjoining pasture or stall. The mare and foal may share a pasture after about 8 to 12 weeks.

The foal (now a **weanling**) should calm down in a few days and may be turned out to pasture alone or with a gentle horse. During the weaning period, a foal often becomes more interested in human companionship and begins to develop a personality.

Decrease the mare's feed or pasture and replace alfalfa hay with grass hay during weaning. You may rub camphorated oil on the udder, but do not milk it out.

Careful stallion selection and heredity have given the foal many good qualities, and now environment is critical. Change feed rations as the foal grows, and provide plenty of exercise. Vaccinate and deworm regularly, and keep its hooves trimmed. Handle and train the foal with firm, consistent discipline, being sure to reward it for good behavior. The result will be a healthy horse with good manners, capable of performing to the best of its ability.

# BASIC COLT TRAINING

Colt training can be a very rewarding 4-H project. You can develop a horse that is useful and a pleasure to work with. At the same time, you will receive invaluable personal training: you will learn patience, self-discipline, responsibility, and self-confidence. Since horses learn best by repetition, a few days or a few weeks may be required for each step to be completely successful, depending on the individual horse. Also, to avoid anticipation and “souring” of the young horse, be sure to vary the sequence of training. Perseverance will provide many more successes than disappointments, and you need the ability to cope with both.

Undertaking a colt or horse training project takes significant dedication, commitment, time, and effort. Members who intend to train their own young horse should be experienced horsemen, strong enough to not be pushed around by the horse and old enough to make well-thought-out, responsible decisions. The old adage “Get a young horse for your child and let them grow up together” is almost always a bad choice. In addition to their own experiences, members should also have an experienced horseman to work with as a mentor, consultant, and advisor.

Again, starting and training your own horse can be an extremely educational and rewarding experience, but this experience is not for everyone. If you are not prepared to spend a minimum of ½ hour per day, 5 to 6 days a week working with your colt, this may not be the project for you.

There are many philosophies on how to train foals and horses. Following are general and basic methods you may want to include in your colt-training endeavor. The methods emphasize teaching manners and discipline, so the colt learns to do what the trainer wants with the least possible effort on the horseman’s part. These lessons are not just for a young horse, since it may be necessary to go back to basic training at any time in a horse’s life when problems arise. While training your own young horse is rewarding, remember it is always acceptable to ask professionals for advice. In some cases, their hands-on experience and expertise may be necessary.

Before beginning this training mission, be sure to read the “Horse Psychology and Behavior” and “Basic Handling and Safety” sections of this book. You must also develop patience and the ability to take each step slow and easy. Never mistreat a colt, and

never become angry. If you, as the trainer, do become angry, stop working the colt until you calm down. Good horsemen have time and patience and use both qualities efficiently and effectively.

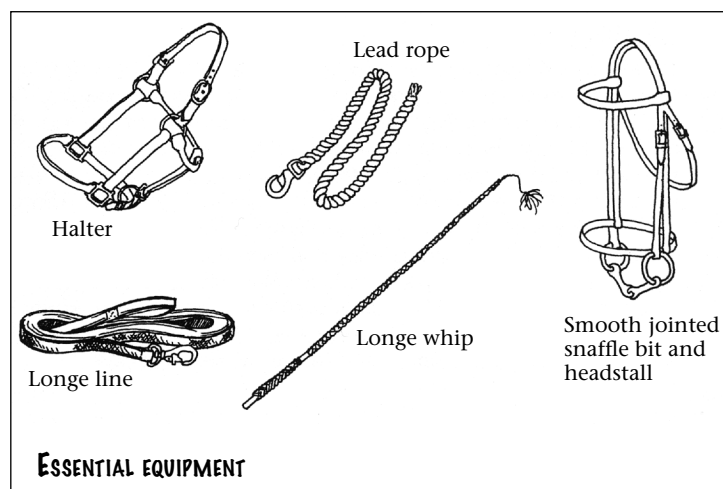
As a trainer, you must develop a specific pattern of voice commands and pressure-and-release signals so the horse will learn what to expect and remain calm. Give these basic traits some thought and use them to your advantage.

One of the first essentials is that the trainer be in charge and demand obedience at all times. The greatest mistake new trainers make is too much loving or pampering. The colt will need a lot less punishment if trained to mind from the beginning. This does not mean beating or abusing the horse to get it to obey, nor does it mean you should never pet your horse. Be sure to be consistent and firm, and to demand obedient, timely response. Punish only when the colt is deliberately doing something wrong. Reward the colt when it behaves well; a firm stroke of the hand and release of pressure upon response are good rewards.

## EQUIPMENT NEEDED

A well-fitted halter that will not slide around on the colt’s head is necessary. A well-fitted halter gives more control and better communication with the colt. A 10-foot lead rope is long enough for leading and tying. Good, strong equipment is necessary.

The longe line should be 30 feet long. Nylon or cotton webbing about 1 inch wide is strong and light. A longe-type whip is useful

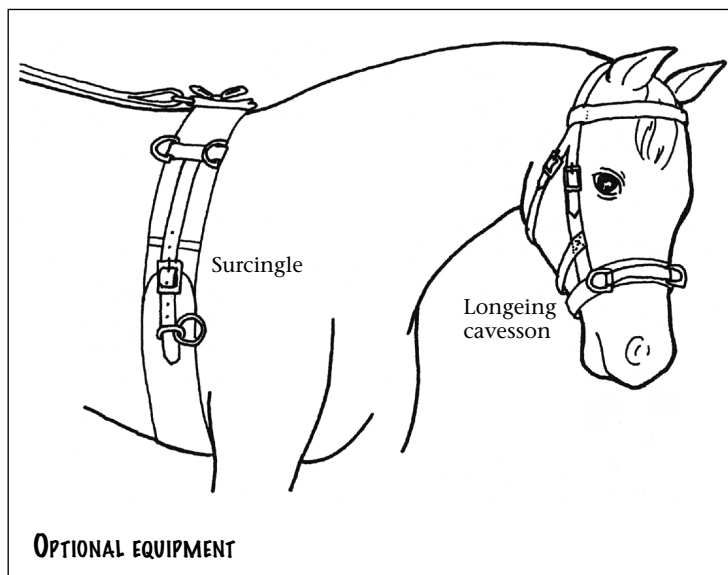


in teaching the colt to lead up or work on the longe line. Use it to guide and control the horse. Never use it for punishment.

Use a jointed snaffle bit in the driving phase and in the early riding training period. You will need two lines at least 20 feet long for driving. The longe line, if long enough, will do the job, or you can use a light 40-foot rope.

The training surcingle is a useful piece of equipment, especially for teaching the colt to drive. You could also use a saddle for the same purpose.

A special halter called a “longeing cavesson” has rings on the side and front to allow maximum leverage, and it helps to keep the colt’s body properly bent in the circle.



## TRAINING BASICS

- Use a definite training plan or method with a clear goal in mind.
- Be consistent in applying aids.
- Do not demand or expect too much of a young horse at one time.
- Do not move on to another step until the horse responds easily to aids.
- Remember, a horse learns by repetition.
- Be communicative — talk quietly and confidently to your horse at every step.
- The purpose of this basic training, or schooling, is to produce an excellent, all-around riding horse, obedient to hand and leg pressures.

## HANDLING AND HALTERING

The first few times the foal is caught, work it into a corner with the mare (this assumes

the mare is safe and cooperative). Merely hang on to the colt with one arm in front of the shoulder and the other one over the rear, so it can go neither forward nor backward. A good rubdown with your hands and a quiet voice will give it confidence.

The next step is to put on the halter. Never leave the halter on the foal in the stall or pasture. To begin moving the foal, have someone lead the mare while the foal is led close beside her. Stay ear-to-ear with the foal, and it will be less likely to resist. Start the basics for getting a horse to respond to pressure and release when you get the behavior you have asked for. Keep the lead rope in contact but slack, maintaining “light hands.” Use the rope only to change direction or stop the foal. Apply light pressure, but do not apply a long, steady pull. If the foal resists moving forward, move it to the right or left to get it started. Apply pressure, and the instant the foal responds, reward it by releasing the pressure. This is the start of the pressure-and-release principle that is important in getting a horse to respond immediately to the aids.

A body rope may be helpful in getting an older colt to move forward. Place a nonslip loop (bowline knot) around the colt’s hindquarters, bringing the long end forward. Use the regular halter rope to turn or stop and the body rope to move forward, as necessary.

Training sessions should be only 15 minutes or less with a young horse. Try to stop on a “good note” when the horse has done something satisfactorily.

## WHOA!

A horse should learn to obey the command “Whoa” instantly. Say “Whoa,” and allow the horse time to respond; if the horse does not respond appropriately, reprimand and again allow the horse to respond appropriately. Follow these steps until the horse responds with a complete halt. To be sure the horse understands, require it to stand still for 10 to 20 seconds.

## TYING

After the foal begins to lead, start tying it up for short periods of time, increasing the time as training progresses. Tie the foal about wither height to avoid pulling the neck out of joint, and to prevent the colt from stepping over the rope. A rubber inner tube may be securely attached to the wall or post and the lead rope tied to it. The rubber will help absorb the shock of a sudden jerk. Do not leave the colt by itself (unattended).

## GROOMING

Be sure to review the “Grooming” section of this guide before beginning. Do a lot of grooming at this stage of the training to teach the colt that it has nothing to fear while being handled. This will develop trust and confidence. Pay particular attention to gently touching the foal’s head, ears, tail, and feet.

## SACKING OUT

Get the horse accustomed to unusual things so it will be unafraid and more relaxed. Begin by quietly and gently rubbing the blanket (sack, rope, or other object) all over the horse until it is not afraid. Once the horse is completely comfortable, you may begin rubbing more aggressively until the horse is calm and fearless regardless of what you may be rubbing it with. If the horse becomes excited, talk softly until it quiets down. Use a calming word such as “Easy” as a signal. Soon the horse will become accustomed to strange objects and gain confidence in you.

## PICKING UP FEET

Since all horses’ hooves need to be trimmed or shod, it is important to start picking up the feet at an early age or at the beginning of training. To pick up the feet, have an assistant hold the horse, or tie it in a familiar place. Start with the forelegs, and run your hand slowly down each leg until the horse becomes accustomed. Pick the foot up and hold it for a moment, then set it down gently, never dropping it. Gradually increase the holding time. A horse should never be allowed to jerk a foot away or set it down without your permission.

## GROUND TYING

To teach your horse to ground tie, take the horse, with a lead and halter on, into a safe, relatively confined area where it cannot run away (a paddock or sand ring will work). Drop the lead on the ground and say “Stand,” then let go of the lead and take a step back. If your horse starts to follow you (which a horse usually will do), pick up the lead and back the horse up to where you asked it to stand, and again say “Stand.” Repeat this whenever the horse takes a step. When the horse does stand for a few seconds, walk over and tell it what a good horse it is.

Gradually increase the distance and time, but be sure to correct the horse the second it takes a step. Eventually, you should be able to walk around your horse, pick up its feet, and even walk out of its sight.

# PREPARING FOR YIELD TO PRESSURE

One of the first (and ongoing) lessons that you should add before you mount the horse is response to pressure. The horse should learn to move away from pressure, whether on its side (simulating legs for side-passing), slightly forward for a haunch turn, or slightly back for a forehand turn. Apply this pressure with the hand where the leg aid will eventually be used (slightly behind where the cinch or girth will be).

## FOREHAND TURNS, HAUNCH TURNS, AND SIDE-PASSING

Review “Showmanship Maneuvers” in the “Riding and Showing” section of this book.

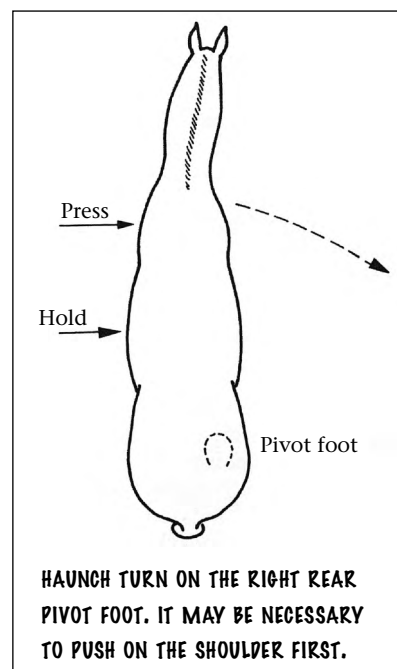
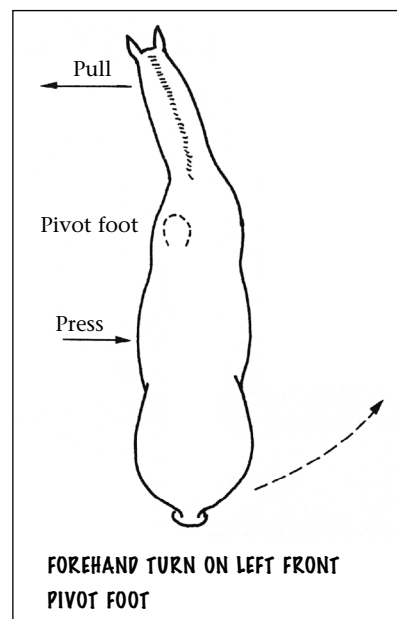
It’s important to teach each maneuver independently and slowly. Begin with a few steps each direction, gradually adding more steps as the horse completes each step accurately, until it has mastered complete 90-, 180-, and 360-degree turns as well as side-passing without resistance in both directions.

### FOREHAND TURNS

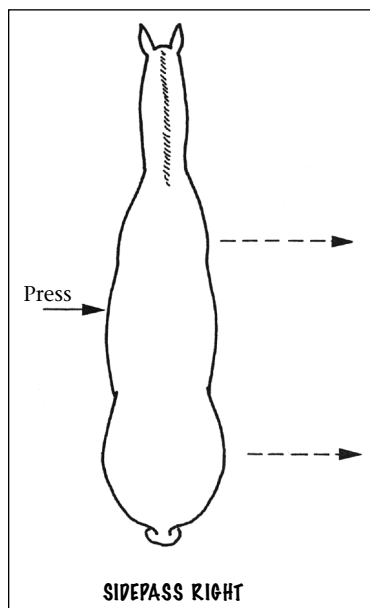
Facing the horse, take the halter in the left hand to hold the head up. With the right hand, touch the horse very lightly about 4 inches behind the girth (where your heel will be when mounted) and at the same time, pull the head slightly to the left. The horse will move its haunches to the right beginning a left forehand turn. Reverse these steps to begin teaching a right forehand turn.

### HAUNCH TURNS

In turning on the haunches, pressing with the hand behind the girth keeps the horse’s



hindquarters in place while the front quarters move around the rear. To move the forequarters to the right, hold the halter rope in the left hand close enough to the head to keep the horse from moving forward. The right hand (used as a leg aid) holds its hindquarters, keeping them from moving to the left. Use the pressure-and-release principle to get the horse to move away from the pressure. The horse's body should be kept as straight as possible. Ask for only one step at a time. Be sure not to let the horse step back with the pivot foot or pivot on the wrong foot.



### SIDE PASS

After the horse learns to do forehand and haunch turns, teach it to sidepass to the right or left by holding the head steady, pressing behind the girth (where your heel might later be) at the same time. Concentrate on making this a forward motion with front and rear feet crossing over in front. Some horses do not cross over in the rear, but simply bring the feet together. This is acceptable. Be sure to use pressure and release.

## LONGEING

The definition of longeing is “use of a long rope to guide a horse during training or exercise.” This is an excellent method of basic training or teaching the young horse discipline. Longeing muscles the horse up and improves its balance and gaits for future work under saddle. It also helps teach the young horse to use the correct lead.

The equipment necessary for longeing is a halter or longeing cavesson, a light rope or nylon webbing 30 feet long with a swivel snap, and a longe whip. Do not use a lead rope, because small circles put too much strain on the horse's legs and shoulders and put the handler in a dangerous position. It is wise to protect the front legs with splint boots every time the horse is worked, at least through its first 3 years. To prevent future unsoundness, be sure young horses are developed and mature enough for all that you ask them to do. Work all horses on at least 20 feet of line. Pay attention to the footing; eliminate hard, uneven, grassy, or rough spots. Avoid letting the colt pull on the line, as this puts extra stress

on shoulders and legs (theirs and yours). Begin with short work sessions and gradually increase the time to 20 minutes. Be sure to work the horse an equal amount of time each direction so it does not become “one-sided.”

The final goal is to begin each gait from a stop. The horse should be obedient immediately when asked to perform each gait or maneuver. The objective is to develop a horse that will promptly take the gait and speed its rider asks for and maintain that gait on a light rein until the rider asks for a change.

## WALK AND TROT ON THE LONGE LINE

To begin, hold the longe line about 24 inches from the halter and walk in a big circle with the horse. Slowly slide your hand down the line until you are several feet away. Keep the horse walking while moving further away. If necessary, use the whip to keep the horse moving. Slowly raise and lower it to the ground or use it sparingly on the horse's hocks.

Stand near the center of the circle, but not in one spot. Move along with the colt in a small circle. Stay approximately even with the horse's hindquarters. The first objective with a green horse is to keep it moving. Hold the line in your leading hand (the hand toward the direction in which the horse is circling) with the excess portion of the line in the opposite hand along with the whip.

Teach the colt to work by voice command. As soon as it understands what is wanted, insist on prompt obedience. Be patient and firm.

At the walk, carry the whip on or near the ground; at the trot, carry it between the hock and stifle; at the canter, hold it croup high.

## “WHOA” AND “REVERSE” ON THE LONGE LINE

To stop the horse, confidently say “Whoa” and take a long step sideways in the direction of its head. Give a sharp tug of the longe line. Be sure to give the command “Whoa” before applying pressure. Do not let the colt come toward the center. If it tries, say “Whoa” and tug on the longe line to stop it. Make it stand. After the horse has been made to stand for a few moments, walk up and give praise. Be sure to take up the slack in the line as you walk forward.

Shift the extra line and whip to the other hand. Say “Reverse,” turn the horse, and start circling in the opposite direction. Eventually, teach the horse to reverse by standing in the center of the circle, holding the whip in front of it, and giving the command “Reverse.”



## CANTER/LOPE ON THE LONGE LINE

Start the canter after the horse works calmly and obediently at the walk and trot and obeys the command “Whoa.” Give the voice command “Canter,” then raise the whip and step sideways to the horse’s rear. Use your whip to encourage, if necessary, until the horse begins to canter. At the canter hold the whip above the croup. Keep the horse going for two or three circles. Gradually increase the number of circles each day to allow time for conditioning. **Remember to work both directions.** The horse should be on the inside lead. If not, slow to a trot and start the canter again.

Be sure the canter is controlled, with no racing, bucking, or unruly behavior. The horse should not be unruly on the longe line; expect only behavior that is appropriate for riding. Work the horse in a relaxed manner and as calmly as possible. Do not rush the training.

## SADDLING

The young horse (depending on breed, size, etc.) is usually developed enough at 30 months to begin carrying a rider’s weight during short training sessions. After the horse is working well on the longe line, start getting it used to carrying something on its back. A small saddle is much better than a heavy one. To start, remove the stirrups or tie them up so they won’t flop. Place the blanket and saddle on the colt’s back gently. Raise the blanket off the withers to allow shoulder muscles easy movement. Do not pull the cinch too tight; gradually tighten it just enough to hold the saddle on. Walk the horse a few steps to prevent it becoming “cinchy.” If the horse is startled, say “Whoa.” When the horse is settled, work it on the longe line with the saddle. After a few circles, check the cinch for tightness. Continue working the horse until it is completely relaxed.

## INTRODUCING THE SNAFFLE BIT

Refer to the “Tack and Equipment” section for information on types of snaffles and fitting. Start getting the young horse used to the snaffle by removing the reins and letting it “carry” the snaffle in the stall or corral for several short periods. Then longe it with the reinless snaffle under a halter until it is no longer playing with the bit and is keeping its mouth closed. As you proceed, be sure to use a light hand.

## BITTING

The word “bitting” means getting the horse to yield or give to the bit before using it

while riding. You could start biting your horse up by letting the horse stand a half hour each day with a snaffle bit in its mouth. You can fasten the reins to the surcingle or the saddle. Adjust the reins so that the horse may stand without pressure on the bit when its head is in the proper vertical position. This reward will teach the horse not to resist the pressure on its mouth. Be sure to not over-tighten the reins. Over-flexing the horse can cause injury in the neck, loin, and back as well as unnecessary pulling on the mouth.

## GROUND DRIVING

Ground driving establishes more precise control and teaches the animal to respond to the reins before it is ridden. Ground driving also develops the horse’s gaits and natural balance before carrying a rider. Attach the lines to a halter, longeing cavesson, or snaffle. If you use a halter or cavesson, be sure it fits snugly for better contact. Use the rings on the sides of the noseband for the lines. If one is available, use a training surcingle to keep the long driving lines in place. If you use a surcingle, the horse must become accustomed to the crupper, which fits under the tail to prevent the surcingle from creeping too far forward. You can use a saddle in place of the surcingle by tying the stirrups underneath the horse. Attach side rings and run the long lines through them. This will keep the horse’s head in position and avoid getting the lines underfoot.

## “WALK” AND “WHOA” — DRIVING

For training to ride, it is not necessary to follow directly behind the horse. If you choose to drive from that position, always stay at least a horse’s length behind its heels. It is also acceptable to drive your horse from the side at or near the point of hip.

Ask for the “Walk” and keep a very light feel of the bit. Keep the horse moving by voice command, slight use of the whip, or by using the lines if necessary. If the horse is going too fast, use “give and take” rein pressure and a calming voice to slow it down. You may find it necessary to tug harder with alternate reins, one at a time, if resistance continues. Make wide turns by pulling one line (rein) and releasing the other, to allow the head to go in the direction of the turn.

After the horse settles down, give it the command “Whoa,” set the lines (reins) so the horse goes into the pressure, and hold the pressure until the horse relieves it by stopping. After several stops, make it stand. When finished, bring the outside line over the back of

the horse and move forward to gather the lines and praise the horse. Maintain contact with both lines. Master each gait before advancing to the next. Frequently practice stopping and starting. Make a point of handling the lines as delicately as possible.

## BACKING ON THE DRIVING LINES

Standing directly behind the horse (a horse length behind) and holding the lines about chest high, ask the horse to “Back.” Pull lightly on one line and then the other to turn its head slightly back and forth, then pull firmly and evenly on both lines. The reason for turning the head back and forth is to upset the horse’s balance just enough to lighten the weight on one foreleg and the opposite hind leg. It will then naturally step backward when even pressure is applied with both lines.

The lines should help in guiding the horse back in a smooth straight line. The instant the horse responds, give the horse release by slackening the lines. Only ask for one step at a time. Stand a few moments to settle and relax the horse, then drive it forward a few strides so it won’t get in the habit of running backwards. Remember, pressure and release.

## TURNING ON THE DRIVING LINES

To turn to the left, start the horse circling to the right, with both lines run through the side rings. Transfer both lines to the right hand, in order to slide the left hand down about a full arm’s length and shorten the left line. With a firm steady pull, turn the horse to the left. As it turns, allow the right line to slide through your hand in order to keep it slack. Tell the horse to “Walk.” Circle the horse a few times, then turn to the right by reversing the movements. Be sure the horse is working perfectly at the walk before trying these turns at a trot. Concentrate on teaching it to turn neatly and smoothly in response to the lightest possible pull on the lines. Teach the horse to respond when pressure is applied, not just when the horse expects a response is wanted.

## CIRCLING ON THE DRIVING LINES

Driving in a circle allows a horse well into its training process, together with an experienced ground driver, to be cantered on the lines and to learn to take inside leads both directions. When circling to the right, the right line is the inside, or leading line. Train the horse from the start to look in the direction it is moving by adjusting the inside or outside line. Work as in longeing; keep toward the center, but move with the horse. Give the command

“Walk” and keep a very light feel on the inner line. The horse may want to turn in, but keep it away by using the outside line. The horse’s body should be properly bent while circling. If the horse tries to trot or run, put pressure on the lines, and demand the “Walk.” If it stops, start walking again at once.

Concentrate on bending the horse’s body. Forcing the hindquarters to the inside causes the horse to take the inside lead. If the horse picks up the wrong lead, drop to a trot and repeat the aids. Work toward quick, smooth response in changing from one gait to another, including the canter from a walk.

## TRAINING TO RIDE

When riding begins with a snaffle, use gentle pressure on the reins as an aid to ask the horse to lower its head and relax its jaw. This will “flex the horse at the poll.” A good headset takes time and patience to acquire. Ultimately, your horse should be able to stand flexed with slack reins.

Instead of starting the colt with a snaffle bit, you may use a bosal hackamore for the early riding phase. When it is ready to be advanced to a bit, use the bosal and snaffle together. During this time, you may bring the bit gradually into use.

A running martingale can be useful in preventing the horse from throwing its head up to escape bit pressure. Adjust it so that it does not affect the reins while the head is properly set.

## GIMMICKS

“Gimmicks” are defined as restraints used to get control. Standing martingales, hobbles, wire curb straps and nosebands, tack collars, war bridles, or running W’s are often undesirable shortcuts; their results are usually not lasting. Gaining the horse’s complete confidence by the ways described previously is a better choice for acquiring obedience.

Sometimes, however, you will need additional methods, especially if the horse has been allowed to develop bad habits. Before you apply any extreme methods, make every effort to discover what caused the horse to develop the bad habit; try to do something about the cause. It might be that you are the problem, and not the horse. Many times, if you remove the cause of the problem, the effect will disappear. Your 4-H leader or local professional may also be able to help identify the problem.

## MOUNTING

Work in a relatively small enclosed area with ample head room; check the cinch, ask the horse to “Stand,” and collect the reins. It is helpful to slightly shorten the inside rein so if the horse does move, it is moving toward the inside and in a circle. Slowly ease into the saddle, being careful not to stick your toe in the horse’s side. You may want an adult or more experienced horseman to be present when you mount the first few times. When the horse seems relaxed, gradually and quietly shift weight in the saddle, swing your feet, and drag a leg over the croup. Also mount and dismount from the offside. Praise the horse and talk quietly to calm it. Never let the horse walk off before you ask it to do so.

## “WALK” AND “WHOA” — RIDING

Ask the horse to walk, using voice, legs, hands, and weight. If it does not respond, use stronger aids until you get the response you are asking for. If the horse refuses to move, a gentle pull on one rein or the other will make it take a step or two to the side; then encourage him to keep moving. It helps to have another rider on hand as a horse will travel more willingly with another horse. Once walking is successful, move on to backing, trotting, and cantering. Refer to the “Performance” section, specifically gaits, before moving forward.

It is usually necessary to use exaggerated aids in the beginning phases of training. As the horse learns to respond, these should lighten and eventually become almost unnoticeable.

## REINING

To turn right, hold the right rein out or toward your hip, pulling the horse’s nose slightly and bending its body in the direction you want to go, using a left leg aid to push the horse to the right. This rein is called a “direct” rein, and it actually leads the horse around. Do not pull back on the direct rein. The rider’s weight naturally shifts slightly to the right, and the left leg presses against the horse. At the same time, move the left rein to the right against the horse’s neck without pulling on the bit. This is the “bearing” rein. Reverse the aids for turning left.

The horse eventually learns to turn when it feels the slight shift of weight, the outer leg pressure, and the pull of the rein. The rider gradually uses the direct rein less and the bearing rein more, always using a leg aid. Do not hurry the neck reining; it takes time.

Change directions often, being sure to go as much to the left as to the right. Ride

in circles, in serpentines, or in circles joined together; do not think of them as “figure 8’s.” Be sure the horse is bending its body in the direction it is circling. This is important preparation for advanced training in rollbacks and flying changes. The horse should be “following its nose.” A leg aid on the outside of the arc, behind the cinch, will keep the hindquarters in the circle. The horse curves its body around the rider’s inside leg at the cinch. Work at the walk until the horse is bending easily, then advance to the trot, and then to the canter.

## COLLECTION

When the horse has learned to obey leg aids and voice commands and is responding easily to light rein contact, it should learn to collect itself. It is easy to assume that since a horse uses the walk, trot, and canter when moving freely in the pasture, it needs little or no training to do them while being ridden. This is not true, because with the addition of a saddle, bridle, and the weight of a rider, natural coordination and balance are changed. It is not only necessary for the horse to learn how to handle the unaccustomed weight, but it must be taught to walk out briskly, trot smoothly at a collected jog or an extended trot, and lope calmly.

“Collection” may be defined this way: to gather, to get the horse in-hand, to bring the horse to attention, or to put it on the bit. Ask your horse to travel in a collected way by driving it into the bit with leg pressure and your weight and at the same time keeping light contact on the bit in order for the horse to bend at the poll. The horse then travels with a shorter, lighter stride, or “collected.” Its legs should be well under itself, not “strung out” behind.

Good concentration is required for the correct balance of rein contact and leg pressure. Try 10 or 15 steps at first, letting the horse relax a few minutes before the next attempt. Do not expect perfection at all gaits for several weeks. You must use your legs when asking for collection. Do not think that collection means simply pulling the horse’s head into its chest. The horse can be “extended” by relaxing the contact on the bit to allow it to extend its neck, which permits it to move ahead with more freedom.

A “finished” or trained pleasure horse should allow itself to be collected or extended in each of the three gaits and move from one gait to another with no resistance. A nicely collected horse with light contact on the reins is not an overnight accomplishment.

## SUPLING AND BENDING EXERCISES

Spend time preparing the horse for advanced and future training to help avoid problems such as charging (speeding up), tail switching, throwing the head up, hopping, or cross-leading. Try this exercise to sharpen a horse's response in yielding its hindquarters to the leg aid. Starting at the walk, two-track to the left about 10 steps; then, without a pause, switch cues and track right 10 steps. Continue making changes of direction three or four times, then relax the horse with straight work before trying again. When this is done smoothly at the walk, move up to a trot. Remember, do not let the horse stop on the changes! You may also do this exercise at the canter.

Another exercise is a circle at the canter, stop, and sidepass. After about six steps sideways, pick up the canter on the opposite lead. The object is to properly bend the horse for the change of lead.

Shoulder-suppling exercises such as the "Shoulder out," "Shoulder in," and a variety of circles, two-tracking, serpentines, "Hip out," and "Hip in," all contribute to your horse's suppleness, balance, and obedience.

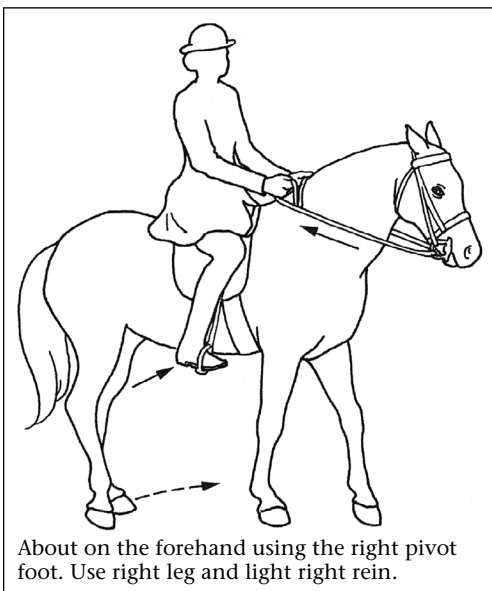
## TEACHING COMMON MANEUVERS

### ABOUT ON THE FOREHAND

For a turn using the right forefoot as a pivot, use the right rein and right leg. The reins hold the front end of the horse in place,

and the right leg used behind the girth turns its hindquarters to the left. Keep the horse reasonably collected through the turn.

Turn the head to the right so that you can see only the right eyebrow. The right forefoot remains as a pivot foot while the left forefoot steps around in front of it. Press your left leg at the girth just enough to keep forward movement



About on the forehand using the right pivot foot. Use right leg and light right rein.

and to prevent the horse from backing around the pivot foot. Ask for one step at a time at first.

Use the opposite aids for a turn on the left forefoot. Practice both ways equally.

### ABOUT ON THE HAUNCHES

Think of the haunch turn as swinging the forehand around the hindquarters. For a turn on the left rear pivot foot, apply pressure with the right leg at or in front of the girth to hold the hindquarters in place. Use a left direct and a right bearing rein, with the horse's head turned to the left just enough so that you can barely see the left eyebrow.

To turn on the right rear pivot foot, rein to the right and use pressure with the left leg behind the girth.

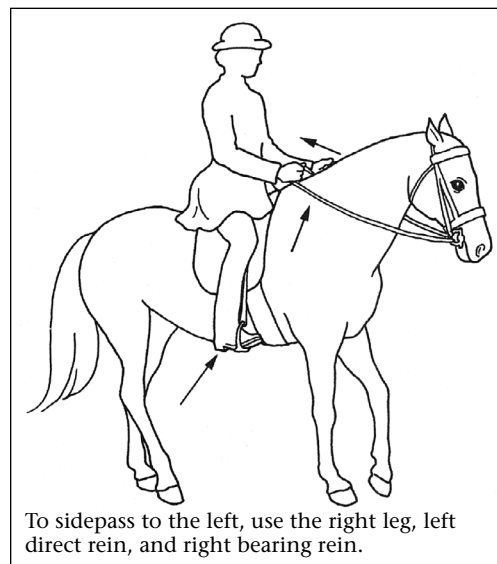
Keep the horse pushed up on the bit at all times. Remember, it is necessary to keep forward motion with the hind leg stepping around in front of the pivot foot.

### SIDEPASS

The sidepass is tracking to the side with no forward or backward movement. The horse will be very slightly bent away from the direction it is traveling. Both the forefeet and hind feet should cross over in front making two parallel lines, but the rear feet may simply come together.

To sidepass to the left, turn the head slightly with the left direct rein, using a right leg aid. Reinforce the direction of travel with the right bearing rein. Gradually straighten the body as the horse becomes more responsive by bringing the left direct rein closer to the withers.

At first, work facing a wall or fence to keep the horse from moving forward. (If it tends



To sidepass to the left, use the right leg, left direct rein, and right bearing rein.

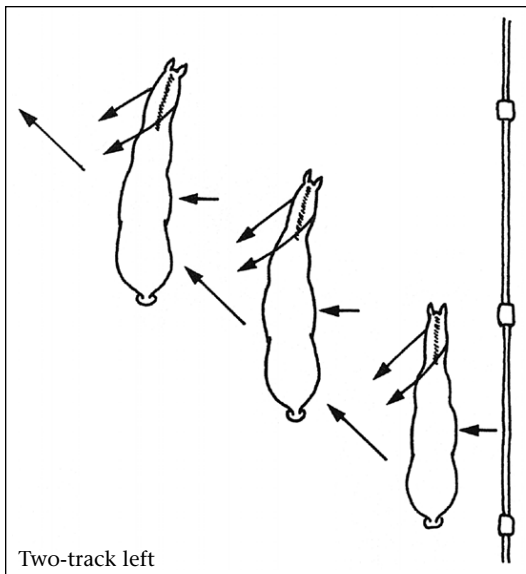
to back up, face away from the fence.) When starting the horse, let the front quarters go slightly ahead of the hindquarters to make it easier for it to cross over properly. As it improves, work toward less body angle until it is traveling directly to the right or left.

## TWO-TRACK

In the two-track, the horse's body moves straight ahead, parallel to the fence or wall, while tacking at a 45-degree angle across the area.

To track left, use the right leg to push the hindquarters to the left, but be sure to avoid leaning to the right. Body weight should be over the center of the horse. Use both the left direct and right bearing reins to push the horse's shoulder slightly toward the left. At first, the head will be bent to the right, but as the horse responds more easily to the leg aid, it should look more and more in the direction of travel.

To track right, reverse the aids.



## INTRODUCING THE CURB BIT

You may need several months of training to produce a horse that yields to light pressure from the snaffle bit. It is a mistake to think a more severe bit will do the job faster or correct a horse that will not slow down. The results will be temporary because the mistakes that caused the problem will not have been corrected.

When the horse has become totally responsive (this may take quite a long time), introduce the curb bit. A short pelham is good for the transition because it has direct snaffle rein rings, plus curb rein rings to apply leverage. Use the curb reins gradually, then more and more as the horse relaxes its jaw. A grazing bit or a Tom Thumb bit has very little leverage. Either one is also a good choice for the first curb bit. Remember, it is acceptable to return to the snaffle bit for training as the need arises.

The horse discovers two changes from the snaffle: the action of the curb strap and potentially the solid bar across the tongue, depending on the bit. Choose a low to medium port, depending on the tongue relief the horse requires. Let the horse wear the reinless bit in the stall for 30-minute periods until it quits playing with the bit. Leave the curb strap loose.

Begin riding with a very loose curb strap to make the bit's action similar to that of a snaffle, on the corners of the mouth without leverage on the jaw. Allow the horse time to accept the new bit. As the jaw relaxes, gradually tighten the curb strap.

The transition from snaffle to curb bit may take 2 days or 2 months, depending on the horse. Do not rush the training. Strive for a closed mouth during stops and reining. Do not hesitate to return to the snaffle for retraining or exercising the horse.



