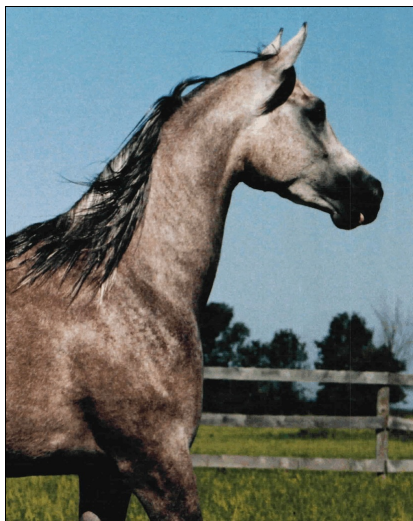




THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

Horse Ownership: Obligations, Costs and Benefits



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Horse Ownership: Obligations, Costs and Benefits

Owning a horse involves a considerable amount of time, dedication and hard work. If kept confined, a horse requires care every day. Owners must be prepared to spend more time caring for the horse than riding it. Someone has to feed, water, groom and exercise the horse daily.

Horse ownership has many costs, which may run from \$600 to more than \$4,000 per year. First, one must consider the initial investment required to purchase a horse. This can vary from a few hundred to several thousand dollars. One must also consider the costs of board (if required), feed and bedding. Under complete confinement conditions (no pasture), much more feed, bedding and labor are required. Horses also require farrier work every six to eight weeks. A preventive medicine program is also required to prevent common diseases, including internal and external parasite prevention. Veterinary services may be required at times when illness or injury occurs. Finally, certain tack and equipment are required to take care of and enjoy your horse. The tack and equipment need to be replaced periodically. Other possible expenses can include costs associated with trail riding, showing and training.

Because horse ownership entails certain risks and possible liability, many horse owners carry liability insurance. Liability insurance provides protection against potential liability for injury to people and damage to property. There are several types of policies covering various aspects of pleasure and business uses of your horses and facilities. You should discuss the types of policies with your insurance agency. Also, certain organizations such as state Horse Councils carry liability insurance with membership. A limited number of companies offer horse mortality insurance ranging from full mortality to limited-peril policies and covering loss from fire, lightning and transportation. To acquire mortality insurance you must establish the value of your horse from an equine appraiser and obtain a health exam from a veterinarian.

Based upon some national, state and local surveys, the following are percentages of total annual expenditures to keep a horse:

Feed	50%	Insurance	6%
Veterinary care	19%	Tack	5%
Farrier	10%	Insecticides	2%
Bedding	8%		

Keep in mind that these are annual maintenance costs and do not take into consideration emergencies or initial purchases. Other costs that may be incurred include entry fees, rider training, travel expenses, horse training, machinery and equipment rental.

Horse ownership requires some work, but it also can be rewarding. Horse owners and communities benefit from horses in several ways. Riding is a sport in which the entire family can and often does participate. Children learn responsibility by taking care of the horse. A horse may also assist a child in developing greater coordination, strength and agility. Children who participate in horse-related activities learn sportsmanship and how to get along with other children. Riding horses also improves physical fitness. Handicapped riding programs have helped people rehabilitate damaged muscles and regain coordination and rhythm. Family unity may be enhanced when most or all of the family members are involved in owning, caring for and using horses. Many professionals use the time spent with a horse (whether caring for it or riding) as a means of relieving stress, promoting relaxation and exercising.

In all, horse ownership and associated activities such as showing, trail riding or just riding for pleasure provide many hours of recreation and the opportunity to take care of a living, responsive animal.

Selecting and Buying a Horse

The decision to purchase a horse is an important one that should not be taken lightly. Many inexperienced horse buyers enter into ownership quickly, with little thought or preparation. You must consider what type of horse you want and look at many different horses before finding an acceptable choice. The search for the perfect horse can often be frustrating; however, it is important to remain patient and explore many options.

Regardless of breed or sex, most horses can be divided into six basic types: child's beginner, adult's beginner, pleasure, equitation or lesson, athletic or competition, and breeding. Once you determine the type of horse that best meets your needs, consider which of the following attributes that horse should possess: temperament/disposition, size, conformation, age, level of training, soundness and pedigree. These attributes will vary in their importance depending on which type of horse you decide to buy.

For example, you would want to consider temperament, size and level of training when buying a child's beginner horse. A child's horse should be quiet, reliable and possess enough skill to help teach the child. Obviously, a two-, three-, or four-year-old horse does not possess enough maturity or skill to be a beginner child's first horse. An older horse with a history of professional training would be a better fit. Important attributes in an adult's first horse include temperament, size, soundness and level of training. A beginner horse for an adult can possess a lower level of training than that needed for a child.



A pleasure horse for a more experienced rider can have a lower level of training than a horse intended for a beginner rider. Emphasis should be placed on temperament, size and soundness. In contrast, an equitation or lesson horse must have a relatively high level of training. These horses are often past their prime age for competition. Emphasis should be placed on temperament, level of training and soundness in its needed attributes. The athletic or competition horse can vary greatly from a horse in its prime that is currently competing to a young horse with the potential to become a great athlete. When purchasing a competition horse, emphasis should be placed primarily on level of training or athletic potential, soundness and resale value. The athletic potential of a young horse can often be evaluated by the pedigree and performance records of the dam and sire.

Finally, breeding horses are often former athletic/competition horses. When buying a horse for breeding purposes, emphasis should be placed on conformation, pedigree and breeding soundness. Many breeders campaign horses while using them for breeding purposes. This is acceptable, provided the breeding and campaigning activities do not interfere with one another. Table 1 provides a guide in ranking attributes for selecting different types of horses.

Table 1. Attributes to consider when purchasing or leasing different types of horses. Rank each attribute from 1 to 7, with 1 the least important and 7 the most important.

Horse Type	Temperament/ Disposition	Size	Conformation	Age	Level of Training	Soundness	Pedigree
Child's Beginner							
Adult's Beginner							
Pleasure							
Equitation/Lessons							
Athletic/Competition							
Breeding							

Once you have determined the type of horse you want and its desired attributes, it is time to start looking. It is always best to bring along another person, preferably a professional horseman, when looking at a potential purchase. This is especially important if you are not an experienced horse owner. A second person may observe something about the horse you may not. Possible sources of help include a horse professional or trainer, friends, neighbors, county extension agents, 4-H leaders, etc.

After finding a potential horse, make an appointment to look at it. When looking at a potential purchase, there are several things to keep in mind. Try to get to the appointment early. This may give you the opportunity to see the horse being caught, brushed and saddled. It is important to see how the horse reacts to being handled straight out of the stall, paddock or pasture. In addition to observing the horse's reactions, note the general appearance of the stable and the other horses at the stable. If the stable and other horses look well cared for, the horse you may want to purchase is probably well cared for.

Insist on handling the prospective buy yourself. Watch for and inquire about bad habits such as cribbing, stall walking and kicking. Ride the horse to see that the horse can truly do what the owner claims. If you are a novice or beginner, use an uninterested professional horseman who will give you an honest opinion on the horse's riding abilities as it relates to your skill level. Finally, consider the resale value of the prospective buy. Even though you may think you want to keep the horse forever, your interests or your child's interests may change. Consider this horse as a potential investment. You want a horse that will not be difficult to sell should your needs or desires change.

When you do find a horse that you feel is the horse for you, certain conditions should be agreed upon before closing a deal. First, consider having a pre-purchase veterinary exam. A thorough veterinary exam will cover the musculo-skeletal, ophthalmic, reproductive and nervous systems. The horse should be examined completely for any signs of lameness, scarring, muscle atrophy, vision, teeth condition, etc. If a mare or a stallion will be used for breeding purposes, they should be evaluated with a veterinary breeding soundness exam. Always make sure the horse is the age the seller claims it to be and the veterinarian understands the intended use of the horse.

If the horse is everything the seller has claimed it to be, it passes the pre-purchase veterinary exam, and you are certain this is the right horse, take one more precaution before buying. It is in your best interest to use a contract in which the seller will agree to take the horse back and refund your money if you are unhappy with the horse in the first five to ten days that it is at your home. If the seller disagrees, look for another horse. The five- to ten-day period will provide adequate time to make sure you made the correct choice.

There are alternatives to owning a horse if you are still uncertain about whether you want to buy a horse, or even about what type of horse you want. These alternatives include taking lessons or leasing. No one is ever too experienced to take some riding lessons or attend riding clinics. Even if you decide to purchase a horse, you have a “leg up” on riding properly with your own horse. Leasing a horse will provide some of the same benefits as taking lessons. Depending on what type of lease arrangements you make, you can learn more about caring for the horse and what may actually be involved in ownership.

Physical Facilities

The horse is an athlete and should be treated as such. Paddock design, pasture fencing and barn design should keep this in mind. Horses are active and prone to injury. When designing or looking at horse facilities, safety, function, flexibility and aesthetics should be considered. Safety is the most important factor, as more than fifty percent of injuries horses sustain are attributed to facilities. In most circumstances, a horse will be comfortable in an outside paddock that has a shelter to provide shade in hot climates or protection from wind in cold climates. It is often unnecessary to house horses in a barn. Shelters that help provide protection from environmental temperatures include buildings that consist of open-front sheds. Open-front sheds or loafing sheds do not have to be elaborate. They are three-sided and can be made out of most any material as long as the material is safe for horses. The most important consideration of the structure is orientation, the size based on the number of horses that will be allowed access to it at any one time and height to allow for ventilation and protection from precipitation. The open side of the shelter should face to the south or southeast, with the long axis of the building running on an east-west axis. In the fall and winter months, this orientation will provide more heating to the open side facing southeast or south. The minimum clearance from the ground to the eave on the open side is 10 feet. The width of the shelter, depending on type of construction, can be 14 to 40 feet. Open barns wider than 40 feet often do not ventilate well naturally. As a rule of thumb, a minimum of 80 square feet of floor space should be provided per 1,000 pounds of horse weight using the shed. Below is a table of the recommended roofed area for various classes of horses.

Recommended roofed area for open-front horse sheds.

Class of horse	Covered area (sq. ft./horse)
Foals	100
Yearlings	120
Mature horses	150

If the sheds are also used for feeding, especially for providing hay, 36 inches of feeder space should be supplied per mature horse, 30 inches for yearlings, and 24 inches for foals. Many equine physiologists and behaviorists consider run-outs the best housing environment for horses so they can choose to be inside or out. Except in the most extreme conditions, the horse should be able to maintain body temperature with the structures discussed.

Land Requirements

There has been little research done on the space requirements of horses. If you are attempting to figure the carrying capacity of land for a horse, a good rule of thumb is one and one-half to two acres of open land per horse. Two acres, if managed properly, should provide adequate forage in the form of pasture and/or hay ground to adequately feed one horse. On land that would be suitable for crop land, one acre per horse may be adequate (see Extension Bulletin B1224 "Forage Systems for Horses in Georgia"). Many people keep horses on smaller amounts of land and do not depend on the land to provide any forage. When the amount of land available is less than adequate, supplemental nutrients must be provided in the form of hay and possibly grain.



There has been no research done to determine the minimum area required for a turnout paddock for a horse to exercise. The “Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching” recommends a minimum area of 0.1 (one-tenth) of an acre, approximately 4,500 square feet or 75 feet x 60 feet, for an exercise lot. In addition, local or county zoning ordinances may have land area requirements per horse.

Stabling

If the horse is to be kept in a stall, a box stall is preferred. The recommended size is 12 x 12 feet for the average horse. There is some evidence that suggests that a horse actually rests better and is more likely to keep a neater stall if the stall is rectangular in shape. For example, a 10 x 12 feet or 10 x 14 feet stall should be of adequate size for most mature light horses. If the feed and hay are located together so that the horse is standing in the longest orientation while eating, the horse will tend to defecate in one corner of the stall. If the stall is to be used for foaling the dimensions should increase to 14 x 16 feet. The stall ceiling height should be a minimum of nine feet. Ceilings should be made of a moisture-proof (preferably smooth) material with a minimum of exposed pipes and fixtures. Preferably the stall would have a window that can be opened to aid in ventilation and lighting. The bottom of barn windows should be five feet or more above the floor and protected to prevent breakage. Stable doors should be a minimum width of four feet, with sliding doors recommended. The sides of the stall should present no surfaces upon which a horse can crib or chew, or such surfaces should be covered by metal. The sides of the stall should be solid up to seven to nine feet from the floor. Half-inch steel rods or ¾ inch pipe (spaced not more than four inches on centers), No. 4 gauge metal, No. 9 chain-link fencing, or vertical hardwood slats can be used above the solid partition. To aid in ventilation, openings one inch wide and 30 inches above the floor in walls and partitions should be installed with a removable filler strip.

Flooring should make stall cleaning easy and provide a safe, sanitary surface for the horse. The existing soil can be used after construction of a stall. Clay may be added and packed. Using soil for stall flooring will generally require adding and repacking soil after a period of time. French drains can be added to the stalls to keep the soil drier and increase the length of time until soil needs to be added and repacked. Concrete with stall mats or stall mats placed on top of packed clay work very well. Obviously initial cost is greater, but maintenance is much less. A specially-designed compounded synthetic resinous material has been developed that, when applied over asphalt, concrete or wood base, results in a smooth-textured, resilient, uniform, durable surface for use in stalls and wash racks.

Feeders, waterers and other stall equipment should be located where the horse cannot injure itself. The hay manger and feed box should be located across the front wall so that the grain or hay can be added to the stall without actually going into the stall. Water buckets or automatic waterers should be placed near the front of the stall in a corner opposite the manger.

Besides stalls, many barns include a feed room, hay storage area and tack room. The feed room should be capable of holding enough grain to feed the total number of horses in the barn for three to four weeks. If bulk feed is used, an alternative is a bulk grain tank and a storage area for hay. If a feed room is built it should have a concrete floor and be rodent-proof as well as horse-proof. The hay storage area should be large enough for one year's supply. A tack room is necessary for storing horse equipment. The tack room should be separate from the feed room for dust and security reasons. Tack is very expensive and should not be exposed to the elements when not in use.

Equip all stables with at least one smoke detector arranged so that the warning signal can be heard in the residence of the caretaker as well as in the stable. A fuse box with a service disconnect should be within the stable near the door. Some form of switch box should also be some distance from the stable so that electric current can be turned off in case of fire, even if entrance to the barn is not possible. All electric outlets need to have dust-proof covers and all wiring should be protected with a metal sheath.

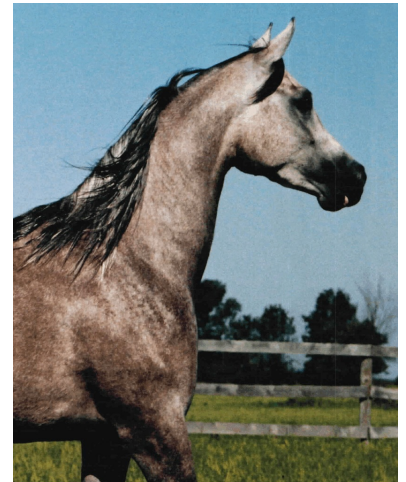
Clean horse stalls daily and strip once a week. Every facility should have a plan for manure disposal. A manure storage area should have a concrete base with a steep slope for drainage at the back to ensure that water and runoff do not run back onto the concrete area. The rear and sides should be sturdily built of concrete blocks, reinforced concrete or bricks. Size depends on the number of horses and the length of storage. Have the storage area within easy access of the stalls, but not so close as to create an odor nuisance and increase the fly menace. Horses produce about 45 pounds of feces and urine per 1,000 pounds of body-weight every day. In planning, every effort should be made to mechanize manure handling and disposal. If manure cannot be applied to land other than pasture, composting should be considered. Composting is an excellent method of waste management for several reasons. Composting reduces the volume of manure by 40 to 70 percent, reduces odor, kills intestinal parasite larvae and pathogens, destroys weed seeds, reduces fly population by eliminating breeding grounds, stabilizes manure nutrients in organic form, is less likely to contaminate water by runoff, and the final product is an excellent soil amendment for lawns, pastures, gardens and riding areas. (Contact your county agent for information on developing a composting system).

Fencing

Constructing a fence requires some planning. First, decide what area is to be fenced; second, decide what type of fence is readily available and can be safely used for horses. Smaller paddocks require a sturdier fence than larger areas.

Wood board fence should have a minimum of three to four rails. Board fencing can be undesirable due to initial cost, painting, splintering, rotting and providing a place for horses to chew. However, board fencing is durable, highly visible and aesthetically pleasing. When building board fencing, the boards should be placed on the horse side of the fence. This decreases the risk of injury and exposure to nails if the fence is broken. Wood fence can be combined with other forms of fencing such as electric and wire mesh to reduce horse damage and increase safety.

Wire fencing comes in several different designs. Wire mesh comes in both diamond mesh and rectangular mesh with 2 x 4-inch openings. The mesh is too small for the horse to get its foot through and will not injure a horse that runs into it. A 1 x 6 or 2 x 6 board or smooth electric wire on top works very well to prevent horses from leaning over and stretching the wire. Wire mesh is expensive but its safety and durability make it popular. Woven wire is cheaper than mesh fence but not as safe. Most woven-wire fences are supposed to hold a variety of livestock, so they are designed with a heavy-gauge top and bottom wire with lighter gauges “woven” between them. Woven wire is not as safe as mesh because horses can get their feet and legs through the large squares and rectangles formed by the wire.



Pipe fence is a sturdy, relatively maintenance-free fence that works very well in small paddocks or turnout areas. The initial cost is generally greater than other types of fence but maintenance costs are very low. Pipe fencing will not give to pressure and may cause injuries to any horse that runs into it.

Rubber belting or rubber strips from old tires and conveyer belts have been used for fencing. This type of fencing requires a lot of maintenance to keep it tight. Horses tend to nibble on the rubber, which when ingested may cause colic and/or impaction. Horses also tend not to respect the fence and will lean on it, causing it to stretch.

Smooth, high-tensile electric wire of four to nine strands is an excellent fence for horses. A high-tensile smooth electrified wire is best suited for large paddocks and pastures. It is one of the less expensive fencing types to buy and install. One disadvantage is that it is sometimes difficult for the horse to see. Also available is high-



tensile electric fence coated with white PVC. A high tensile-electric fence can be constructed with one to two strands of the coated PVC and the remainder with high-tensile wire.

Many forms of plastic, PVC or polymer fencing are now available. Plastic fence is relatively maintenance-free once installed. This fencing is flexible, making it less likely to cause injury upon impact. However, this type of fencing can be difficult and expensive to install.

Other types of horse fencing now available include concrete rail fence and post and cable fence. Many types of fencing will work

for horses. However, barbed wire is considered undesirable, especially for younger horses.

A horse fence should be at least 56 inches to 5 feet high. Fence should be constructed so it is six to eight inches off the ground because horses tend to paw a fence when they become anxious. It is recommended that stallions be housed in an area with fence that is six feet high.

For more information on fence types, materials and building, obtain Extension Bulletin B 1192 “Fences for Horses.”

Routine Care of the Horse

Grooming

Grooming is an important part of horse care. It is vital to the health of the horse and contributes to both hygiene and appearance. Grooming removes dust, dirt and dead cells from the horse's coat and skin. In addition, grooming increases blood circulation, contributes to muscle tone and distributes natural oils, resulting in a shiny coat. It is also the ideal time to inspect for injuries and soreness as well as to bond with your horse.

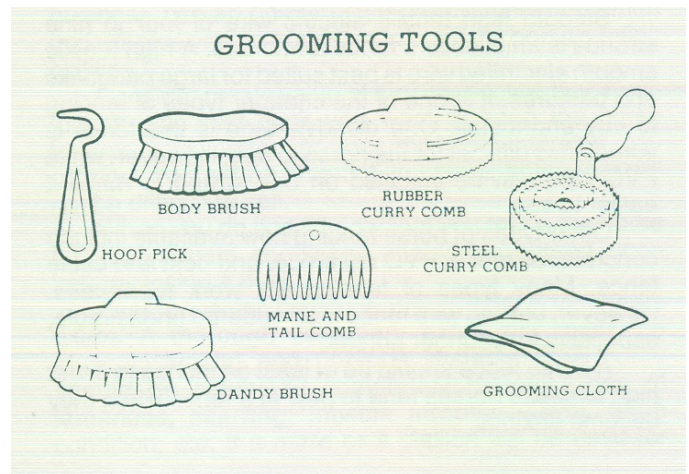
Basic grooming tools consist of the following: hoof pick, dandy brush, body brush, rubber curry, grooming cloth and mane/tail comb. Every grooming session should include cleaning and inspection of the feet. Using a hoof pick, you should remove dirt and other debris from the sole and crevices of the frog. A stiff brush can also be used to remove dirt from around the frog. The hoof should always be cleaned starting in the heel and working towards the toe. This is the ideal time to inspect the foot for abscesses, sole bruises, loose shoes and general growth.

When grooming the horse's body, you should start with a rubber curry comb. This is the ideal tool to remove mud and matted hair. Use the rubber curry in a circular motion to loosen mud and remove dirt. Caution should be used around the head and below the knees and hocks. These areas of the body tend to be bony, and therefore more sensitive. A dandy brush may be a better choice for removing dirt in these areas.

The dandy brush has stiff bristles capable of removing deep dirt and debris from the horse's coat. You should use this brush in short, swift strokes to remove the greatest amount of dirt. This tool is especially good for removing small amounts of mud and dirt from the legs.

Horses with sensitive skin may find the dandy brush too harsh. After the dandy brush you will use the body brush and a grooming cloth.

A body brush is used to remove surface dirt from the coat. It makes an excellent finishing tool in your grooming routine. The body brush should be used by brushing in the direction of the hair. It gives a sleek look to the coat by distributing natural oils for a healthy shine. This brush can be used all over the body and is soft enough for use on the face and lower legs. Finally, a grooming cloth made from a soft, absorbent material can be used. Grooming cloths remove the last layer of dust and are a useful tool for horses with sensitive skin.



A mane/tail comb can be used to groom the forelock, mane and tail. However, many horse owners prefer using a dandy brush. Combs can often break hairs. Many owners simply use their fingers to remove tangles, and then use a brush to remove any dirt in the mane or tail.

Bathing is often a part of a horse owner's grooming routine. Although bathing does remove natural oils from the coat, it is often necessary. Horses are bathed when excessively dirty, after strenuous exercise or in preparation for a show. When bathing a horse it is important to consider the temperature. A horse should not be bathed if the temperature is below 50 degrees F. Always make sure your horse has sufficient time to dry before being turned out for the night. When bathing, use a gentle soap starting at the head and working towards the tail. Care should be taken not to get soap in the horse's eyes or water in the horse's ears.

Blankets are often used in addition to a solid grooming routine. Blankets come in a variety of materials and are used for many reasons. Horses that are being shown or prepared for sale wear blankets to protect the hair coat from bleaching in the summer and excessive growth in the winter. Cooling sheets are used after exercise to prevent horses from cooling too quickly. However, a wet blanket should never be left on a horse. A wet blanket will actually increase the loss of heat from a horse's body. A well-fitting blanket is safe and less likely to rub hair. Blankets should cut back over the withers to avoid rubbing the mane. If you are using a hood it should be lined to avoid rubbing the mane.

Physical Conditioning and Training

The horse is a natural athlete and requires daily exercise. If a horse is kept in a pasture or large turnout area, it generally will get all the exercise required. However, this does not mean the horse will be prepared for strenuous activity. Mature horses that are stabled or kept in small paddocks should be manually exercised or allowed access to turnout daily. Horses that are housed in a stall or small paddock and not provided sufficient exercise become bored. Boredom can lead to the common stall vices of weaving, cribbing, chewing wood and stall walking. Young horses kept in a stall or small paddock require a longer turnout time (minimum six hours) as they are growing and require exercise for proper bone, ligament, tendon and muscle development.

Horses that have too much condition or fat (body condition score greater than 7 on a scale of 1 to 9) are more likely to become injured and develop unsoundnesses than a well-conditioned (body condition 5 or 6) horse. Obesity and poor muscle tone amplify the amount of stress, strain and concussion placed on the legs during activity. Horses can be exercised by regular turnout, a hot walker, longeing, treadmill, driving or ponying. Many of these methods do not require riding and can be used on young or unbroken horses. Many horse owners make the mistake of strenuously exercising a horse on the weekends without any exercise during the week. This inconsistent approach to exercise can often lead to injury. Just like any athlete, a horse must be properly trained for the required activity. Especially after a long lay off, it is important to condition your horse for exercise.

Conditioning your horse requires patience and planning. The most common mistake is asking too much of the horse too soon, resulting in injury. If you have a horse that has been sitting idle for a while, it is time for a tune up. Before beginning any conditioning program it is important to check your horse's overall health and well being. This is an ideal time to update vaccination, parasite control and nutritional programs. This is also an ideal time to schedule an appointment with your farrier. The majority of all lameness problems originate in the foot. Therefore, proper trimming and/or shoeing is vital to any conditioning program.

There are two guiding principles and stages to any conditioning program. Every conditioning program begins with progressive loading during the foundation stage and later moves to specific demands of the sport. Progressive loading is the principle that any given amount of exercise will result in a certain level of fitness. However, unless you increase the training load, no further gains in fitness will occur. For example, a horse begins a fitness program by trotting for 10 minutes per day. Over time the horse will become more fit and able to trot for 10 minutes each day with ease. However, if the owner does not increase the training load by altering the speed, duration or intensity of work, the horse will not become more fit. Progressive loading in this example would be to increase the training load to 15 minutes of trotting per day once fitness has been achieved at 10 minutes per day. It is important to note that overloading at any stage in this process may result in failure of a body system. Overloading the skeletal system may result in fractures or strains of the ligaments and tendons.

The foundation phase through progressive loading builds cardiovascular fitness and strengthens support systems (bones, ligaments and tendons). Cardiovascular fitness at a particular load can often be achieved in as little as a few weeks. However, the adaptation of the support system is much slower. The most common mistake made during the foundation phase is to increase the training load before the support system has adapted. During this stage you must frequently monitor limbs for signs of pain, swelling or heat. Activity during the foundation phase should consist primarily of slow long-distance work. A mature horse should receive at least one month of

slow-long distance work before proceeding onto other training. An immature horse should receive two to six months of slow long-distance work. It is important to realize that the amount of slow long-distance work required depends on the current level of fitness. The second phase of training prepares the horse for a particular activity. It is important during this stage to use exercises that mimic the activities of that particular sport.

With any activity it is important to warm up and cool down the horse adequately. The warm-up period is important to prepare the muscles for exercise. Several minutes of slow, non-strenuous exercise stretches and relaxes muscle, increases blood flow and increases muscle temperature. The cool-down period should occur at the end of exercise. This should consist of slow exercise such as walking or slow trotting. This period allows the horse's heart and respiratory rates to slow before exercise stops. The continued movement helps remove metabolic by-products such as lactic acid from the muscle. Cool down helps to prevent muscle cramping and alleviates potential soreness post-exercise.

Foot Care

As mentioned earlier, the feet of a stabled horse should be cleaned and inspected on a regular basis, preferably daily. A horse such as a broodmare that is kept in a pasture or large turnout area may need attention only every six to eight weeks. Failure to properly and regularly trim the feet causes foot problems. Regular visits from a farrier every six to eight weeks can help keep your horse's hooves healthy.

Dry, brittle feet that start to crack are a common problem if hoof moisture is not maintained. Moisture is continually lost from the hoof wall by evaporation. Conditions that lead to dry hooves include: stabling in dry, dusty and sandy paddocks; dry bedding; careless rasping of the hoof wall; and application of many commercial hoof dressings. The hoof needs water for moisture and the best way to help water enter the foot is to stand the horse in a pool of water or mud, or to pack the feet in wet clay. To stimulate increased blood flow (and hence moisture), massage the coronary band for a few minutes each day. Exercise also increases blood flow to the foot, resulting in healthy hooves.

Dental Care

Dental care is frequently neglected until problems develop. Poor teeth and dental problems result in improper chewing of food. This can result in poor body condition or even colic. Routine tooth care consists of annual or semi-annual floating of each horse's jaw or premolar and molar teeth. A float is a tool similar to a farrier's rasp with a handle. The horse's upper jaw is about 30 percent wider than the lower jaw. Because of this alignment, the pre-molar and molar teeth of the horse do not wear evenly. This uneven wear results in sharp edges that develop on the outside of the upper and the inside of the lower pre-molars and molars. Floating removes these sharp edges, giving the horse a more level chewing surface and less pain.

Horses develop certain behavioral characteristics in response to dental problems. Excessive head tossing is a likely sign that there are dental problems. This can be prompted by many factors, but teeth are often the cause, particularly among young horses. Wolf teeth are commonly the problem. Wolf teeth are small, pointed pre-molars located in the upper jaw. Twenty to thirty percent of female horses and 60 to 80 percent of male horses have wolf teeth. These teeth are often associated with biting problems and may injure the inside of the cheeks and/or tongue. Wolf teeth should be extracted between 18 and 30 months of age, before training begins. Lugging, the tendency for a horse to lean its head to one side when bitted, may be related to wolf teeth or the need for floating.

Grain slobbering may indicate that pre-molars and molars have loose caps under which food is impacted. This suggests that most slobbering is seen among younger horses because they are the ones with caps. However, sharp points on the molars may also irritate the soft tissue of the cheeks and tongue, generating considerable saliva flow. Dropping grain among older horses is both possible and quite common, and is often an indication of dental problems.

Common Health Problems

Internal Parasites

A major concern of any horse owner should be the control of internal parasite infestation. Internal parasitism occurs almost universally in horses and it has serious consequences. Symptoms of a heavy parasite infestation include:

- | | |
|---|--------------------|
| 1. Mild anemia | 7. Rough hair coat |
| 2. Weakness | 8. Slow growth |
| 3. Unthrifty appearance, weight loss | 9. Colic |
| 4. Emaciation | 10. Diarrhea |
| 5. Large distended abdomen (“potbelly”) | 11. Cough |
| 6. Tucked-up flanks | 12. Lameness |

The major internal parasites of concern are *ascarids*, commonly called roundworms; *large and small strongyles*, also referred to as bloodworms, red worms and palisade worms, which are the most serious threat to a horse’s health; *bots*, which are not true worms but the larval stage of a fly; and *tapeworms*.

Controlling Internal Parasites

Internal parasites can be controlled through proper management and regular deworming. Management practices that discourage parasite infestation include feeding horses from mangers and troughs rather than on the ground, preventing fecal contamination of feed and water, and removing manure from stalls and paddocks regularly. Remove manure from stalls and paddocks at least weekly. If possible, twice-weekly or daily removal is preferred. If pastures are used, temporary pastures that are plowed or rotated yearly are preferred to permanent pastures. Rotational grazing is recommended so that pastures can be drug while not being grazed to help manure break down and expose internal parasite eggs and larvae to the sun. Keep the general area clean and free from materials that encourage fly populations. Compost the material removed from stalls and all the manure. The heat generated during composting kills the eggs and larvae.

Regular deworming is an important part of a parasite control program; however, it does not replace good management. A variety of good anthelmintics (dewormers) are available for treatment of internal parasites. Dewormers can be administered in the form of paste, granules, liquid solutions and pellets. Before purchasing any anthelmintics, consult your local veterinarian. Your veterinarian can advise you on how often to deworm, what dewormers to use and how often to rotate anthelmintics. The use of broad spectrum dewormers may eliminate the need for rotation, but parasite resistance is still a concern. As a rule, deworm every 40 to 60 days if you have a heavy concentration of horses. If your farm has a lower concentration of horses, horses can be dewormed every three months. Fecal egg counts performed by your veterinarian will help determine the effectiveness of your deworming program. Foals should begin a regular deworming program at six to eight weeks of age.

External Parasites

External parasites chiefly affect the skin and include biting flies, lice, mange mites and ticks. These parasites are both annoying and harmful to the horse

Flies and mosquitoes may be annoying to the horse. In addition, they can be vectors for such diseases as equine encephalomyelitis (sleeping sickness), infectious anemia (swamp fever) and West Nile virus. Control starts with removal of manure and manure piles. Try to eliminate standing water to discourage breeding areas. Spraying horses and stable areas with solutions containing pyrethins, rotenone and similar materials provide some protection.

Lice can be a problem, especially in the fall and winter when the horse's coat is long. Adult lice are brownish in color and about 1/10 of an inch long. They lay their eggs or nits on the fine hair next to the skin where they hatch in about eight to ten days. The entire life cycle is spent on the horse (host). Lice cause intense itching by their movement over the skin while feeding on skin debris and when biting to suck blood. Affected animals will bite at and rub the areas of infestation until they become raw. A heavy infestation may cause severe anemia. Treatment consists of applying an insecticide such as powder containing rotenone or spraying with a solution containing coumaphos or malathion. Many of these treatments also kill mites and ticks. You may have to treat the horse again after 10 to 14 days to kill the lice that hatch after the first treatment.

Mange or scabies of horses is a specific skin disease caused by small mites that live on or in the skin. There are four types of mites: sarcoptic, psoroptic, chorioptic and demodectes. Mites burrow into the skin, causing intense itching. Small, hairless patches that become encrusted with exudate result. Eventually the skin becomes thickened and wrinkled. Mange mites spread rapidly by direct contact between two horses and may be carried on blankets, brushes and other tack and/or equipment. Treatment for mites requires a thorough weekly application of an insecticide containing coumaphos, dichlorvos or crotoxyphos.

Ticks may be found on horses grazing on pasture, particularly in wooded areas. The first visible symptoms of ticks are rubbing, itching, head shaking and excessive wax secretion from the ear. A heavy tick infestation may cause weakness, emaciation, loss of appetite, anemia and a general state of poor health. Ticks are also responsible for transmission of diseases that may affect the horse, such as piroplasmosis, African horse fever, rocky mountain spotted fever, and lyme disease. Insecticides effective against mites will also control ticks. Single ticks can be removed by swabbing them with cotton soaked in alcohol or chloroform.

Recognizing Illness

The bacterial and viral diseases of the horse are many and varied. The horse owner or manager should learn to observe the signs of disease in horses in order to recognize the beginnings of an illness. Vital functions such as defecation, urination and appetite should be monitored. Signs of depression, nasal discharge, coughing, swelling and general behavior should be noted. It is important for you to be familiar with your horse's normal behavior and vital signs. If a horse is suspected of being ill, check temperature, heart rate and respiration (together know as TPR). In addition, gut sounds, mucosal color and skin pliability should be checked. Anyone can monitor the vital signs of a horse with a little practice and knowledge of normal values.

The normal average body temperature for a mature horse can range from 99.5 to 101.5 degrees F rectally. Digital thermometers can be used. Coat the thermometer with a small amount of lubricant such as petroleum jelly for easy insertion. Raise the horse's tail and insert the thermometer, bulb-end first, about 75 percent of its length into the anus. Hang onto the string or attach it to the tail so the thermometer is not lost in the rectum or dropped to the ground. Make sure the thermometer makes contact with the body wall for an accurate reading. After at least two minutes, remove the thermometer (many digital thermometers indicate when a reading can be made by emitting a noise). Finally, clean the thermometer in cool, soapy water and dip it in alcohol before storing or using it again.

Heart rate or pulse varies with the age of the horse. Normal mature horses have a pulse of 28 to 40 beats per minute (bpm). Newborn foals average 80 to 120 bpm; weanlings 60 to 80 bpm; and yearlings 40 to 60 bpm. The horse should be calm, rested and relaxed to determine an accurate resting heart rate. Illness may cause a heart rate of 80 to 120 beats per minute for a prolonged time in the mature horse at rest. Heart rate will also be increased due to exercise, fright, excitement and hot weather. To determine the pulse rate, press your fingers against an artery. There are several locations on a horse where an artery can be felt: the back edge of the lower jaw; the inner surface of the groove under the lower jaw; inside the elbow, up and forward against the chest wall; under the tail, close to the body; or inside or outside pastern. Practice is usually necessary to locate and feel the pulse easily. A stethoscope can also be used to determine heart rate. Place the stethoscope inside the left elbow, up and forward against the chest wall. Listen for the distinctive “lub-dub” sound that equals one heart beat.

Normal respiration rate for a horse is 8 to 16 breaths per minute. A foal’s respiratory rate will normally be faster than an adult’s. To determine respiration rate, watch the nostrils or the flanks. Nostrils flare and contract with each breath and the abdomen rises and falls with each breath. Do not hold your hand in front of the horse’s nose to “feel” for breaths. Any type of distress increases the respiration rate. If the respiration rate exceeds the heart rate, the horse has a serious problem.

The skin tent test is a test for dehydration. To perform the test, pick up a fold of skin on the neck and release it. The skin should immediately return to normal. If the horse is dehydrated, the skin returns slowly and tends to stay in a fold.

The color of the mucous membranes and the rate of capillary refill (rate of return of blood to the area) give an indication of the quantity and condition of the circulating blood. Capillary refill may suggest problems of anemia, dehydration, congestion and shock. Gums, nostrils and the inside lips of a mare’s vulva should be pink. A fire-engine red color usually denotes illness. Anemia causes a pale color and lack of circulation causes a bluish-purple color. Capillary refill time is determined by pressing your thumb on the horse’s gum and releasing it. It should take less than two seconds for the blood and normal color to return to the area. Longer capillary refill times indicate dehydration or a circulatory problem.

Bacterial and Viral Disease Prevention

The following vaccinations are recommended as a minimum preventive disease program: tetanus (lockjaw), equine encephalomyelitis (sleeping sickness, WEE, EEE), influenza (flu), equine viral rhinopneumonitis (rhino, herpes), strangles, rabies and West Nile virus. Other diseases for which vaccines are available include: Potomac horse fever, Rotavirus A, equine protozoal myeloencephalitis (EPM), botulism and equine viral arteritis. Your veterinarian should be consulted to recommend a vaccination program for the age, type and use of your horses, as well as the area in which they are kept. The American Association of Equine Practitioners (AAEP) provides recommended vaccination guidelines that can be accessed via the AAEP web site.

Sample Budget for Maintaining a Horse

Table 2 is a guide for calculating the annual costs of maintaining a horse. The example will be for maintaining an 1,150-pound horse doing light work. Costs are considered for maintaining the horse both in complete confinement (stall and paddock, no pasture) and with pasture.

Table 2. Guide for calculating costs of maintaining a horse for one year.			
	Confinement (\$)	Pasture (\$)	Your actual cost (\$)
Grass hay	591.30	131.40	
10-12% C. Protein feed	593.13	273.75	
Salt & Mineral	15.00	25.00	
Veterinary care	350.00	350.00	
Farrier	450.00	450.00	
Bedding	520.00	260.00	
Tack, misc. supplies	150.00	150.00	
Insecticides	50.00	75.00	
Pasture maintenance	0.00	310.00	
TOTAL	\$2,719.43	\$2,025.15	

A brief explanation follows on how costs were calculated.

Grass hay: The amount used for total confinement (no pasture grass) was 16 to 18 pounds per day of a Coastal bermudagrass hay costing \$180.00 per ton. With a good quality two-acre pasture, even when the horse may be stalled part of the day, hay consumption for an 1,150-pound horse doing light work should average less than four pounds per day. Of course, this means more hay may need to be fed during the months of December, January and February. This also means that the pasture should be over-seeded with a cool season annual such as ryegrass to provide an extended grazing season.

Feed: An 1,150-pound horse on confinement consuming about 1.5 percent of its body weight in hay will need to consume a 10-12 percent crude protein, 6-8 percent crude fiber feed to meet its energy requirement at the rate of approximately 6.5 pounds per day. Under optimum pasture forage availability the consumption of feed should be closer to two to four pounds per day. For calculation purposes, an average of three pounds was used.

Salt & Mineral: This is to provide free choice trace mineralized salt and additional pasture mix minerals.

Veterinary care: The costs associated with veterinary care include routine vaccinations, deworming and dental care. These cost estimates do not include any medical emergencies or other major health problems such as lameness, etc.

Farrier: This is assuming resetting keg shoes approximately every six to eight weeks. This is highly variable depending on shoe types and whether you have shoes on the horse year-round.

Bedding: Under total confinement, a horse being kept in a stall 12 hours a day or more will use more bedding or shavings. This cost will also depend on how efficiently the stalls are cleaned.

Tack, miscellaneous supplies: This cost is an average for replacement or repair. This does not include initial purchases of a saddle, bridle, halter, ropes, grooming equipment, etc.

Insecticides: These costs can be greater depending on how manure is managed, the overall management of facilities and the number of horses.

Pasture maintenance: This is the maximum cost on a three- to five-year average for maintenance of a Bermudagrass pasture over-seeded in the fall with annual ryegrass. The costs include fertilization with N, P, K and liming, applying herbicides, and machinery and labor costs. Costs could be less based on soil fertility, stocking rate and application of other sources of fertilizer such as composted material.

There is always the option of boarding your horse. Boarding will range from \$100.00 per month, which would generally be pasture only, to \$1,000.00 per month, which would include what is termed “full board and training.”

Conclusion

Owning a horse can be an enjoyable experience and many factors enter into the initial decision about whether horse ownership is right for you. There are many considerations and obligations of ownership including what horse activities are in your area, determining your real interest in horses, alternatives to owning a horse, how to decide what horse to buy, horse management practices and costs, and the benefits you and your family can gain from owning a horse.

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