

# Responsible Horse Care for Winter and Summer

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Your horse depends upon you to provide all its basic needs for survival and good health. The enjoyment of horse ownership is dependent on your animal's health and condition. A sick or poorly maintained animal cannot be pleasurable. Consistent maintenance of your horse's health is much less expensive than the costs associated with returning your horse to good health should it become sick – aside from the emotional strain and loss of potential riding time.

Basic horse care includes proper nutrition, a planned health maintenance schedule, adequate facilities (housing and space) and a hoof care routine. Other considerations include exercise programs, training programs and proper riding equipment. All these factors must be considered if you are sincere about responsible horse care.

Environmental changes also must be considered. Although you have no control over seasonal changes, they have an effect on horses that you must recognize. Extreme variances in temperature require adjusting your management programs for the benefit of the horse.

## Prevention of Thermal Stress

Horses are unique among large domestic animals. They are not raised to produce meat, milk or wool for human consumption. Instead, horses



are raised to be athletes, with work as their principal productive function. There are many different types of work that horses are asked to perform. These range from high speed racing events to pleasure rides on the back forty.

During the hot and humid Arkansas weather, horses generate a significant amount of metabolic heat during exercise that must be dissipated to prevent thermal injury. During hot, humid conditions, sweat will not evaporate; therefore, evaporative cooling becomes ineffective under those conditions,

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leading to debilitating and potentially life-threatening situations in a short period of time.

We often use the phrase, “sweating like a horse.” Horses and men are the only athletic mammals that cool themselves primarily by sweating. Some heat dissipation occurs by means of radiation, conduction, convection and respiratory evaporation. Evaporative cooling through sweating is the most important route for release of heat from the body to the environment.

Thermoregulation for exercising horses requires ample blood flow to carry heat from the body core to peripheral blood vessels in the skin where dissipation and loss to the environment occur. Simultaneously, the heart begins delivering blood to working muscles, essential organs, tissues and the brain. At the onset of exercise, blood pressure is preferentially maintained at the expense of thermoregulation, resulting in an increase in body temperature. As heat accumulates, blood flow from the body core to the surface (skin) is increased to transport the heat from the body core to the surface. As exercise continues, sweat (water and minerals) carries the heat through the sweat glands to the body surface resulting in heat loss to the environment. Continued exercise and sweating lead to progressive dehydration and loss of plasma water from the bloodstream. The greater the exercise intensity of an event, the greater the heat load generated resulting in a greater need for heat dissipation.

Thermal injury is caused by animal dehydration. With prolonged exercise, water intake may increase 300 percent. Research in humans and a series of equine studies show a positive correlation between fluid losses, inability to maintain temperature and onset of fatigue during endurance exercise. The consequence of excess dehydration can be severe: electrolyte and pH disturbances, fatigue, gait incoordination, increased risk of orthopedic injury and death. Under normal conditions, dehydration can be minimized through the provision of adequate water, salt and mineral supplementation and balanced diet. Horses rehydrate within a 24-hour recovery period between exercise programs.

Another measure used in the prevention of thermal injury is monitoring of weather conditions to determine the potential risk to the horse. Several

inexpensive devices are available for quick measurement of temperature and humidity. These are used to calculate the comfort index (the sum of the temperature in degrees Fahrenheit and the relative humidity as a percentage). If the sum is below 130, thermoregulation should not be a concern. When the comfort index is between 130 and 150, horses will sweat, but they should be able to exercise without major problems if normal fluid replacement is allowed. When the comfort index exceeds 150 and the humidity is greater than 75 percent, heat dissipation can be a problem. Horsemen should monitor their horses very carefully during strenuous workouts under these conditions. When the comfort index exceeds 180, normal routes of heat dissipation fail to work and workouts should be discontinued.

Under normal conditions, a balanced ration and a salt-mineral supplementation program should be sufficient to maintain electrolyte balance. However, with intensive exercises, substantial sweating occurs leading to water and electrolyte deficiency which results in weakness, muscle cramps, acid-base imbalance and decreased performance. Mechanisms for the conservation of sodium and potassium improve with the horse’s acclimation to temperature and humidity. A sodium and potassium deficiency occurs additionally in untrained and nonheat acclimated horses. It is critical to monitor and, when appropriate, to provide electrolyte supplementation to horses beginning a vigorous training schedule or who are adjusting to elevated environmental temperatures.

Thermal stress resulting from exercise-induced dehydration can affect performance, causing serious problems for your horse or death. However, this is preventable with provision of adequate water, minerals, monitoring of environmental conditions and use of some common sense.

## Winterizing Your Horse

As summer comes to a close, horse owners should be making management plans for the cooler seasons ahead. For the majority of horses, cold weather does not mean coming in from the cold, but being assisted to withstand the cold as comfortably and healthy as possible. From the owner’s standpoint, winter management gets very basic: routine health care, feed, water and shelter. Yet, there is an amazing

number of horses each winter that are abused from neglect of one or more of these basic management principles.

A healthy horse in the fall will factor into a healthy horse going into the winter. If your horse is free of parasites, in good flesh and properly immunized going into the winter, the greater the chance of your horse being an "easy keeper" during the winter. Emotions and welfare obligations aside, economics dictates that the cost of anthelmintics, veterinarian checkups and immunizations will more than pay for themselves in reduced feed costs through the stressful winter months. Work with your vet to set up a health program for each of your horses and stick with it.

Know in advance what you are going to feed during the winter months. Waiting until after the first frost kills your summer pasture to decide on a winter feeding program is detrimental to your horse. Chances are the grass that he was feeding on was devoid in nutrient value and he was losing body condition anyway. With three weeks to acclimate your horse to new feed sources, plus a declining body condition, you have lost valuable time to prepare your horse for more extreme weather.

The first step in planning a winter menu for your horse is knowing the nutrient value of your hay. Your local county Extension office can assist you in getting your hay tested. The test will take several weeks, so plan ahead. While you are waiting on your hay sample, find out the nutritional requirements of your horse. There are nutritional tables that determine equine nutritional requirements. These may be found in reference books, or in some cases, your feed store may have a copy. The nutritional requirements are based on age, size, reproductive stage (mares) and amount of work.

When your hay sample results are returned, compare the nutrient value of your hay to the nutrient requirements of your horse(s). In some cases, such as a mature horse with low workload, a good quality hay may provide all the nutrients he will need. However, in most cases, a combination of hay and grain will be required to meet the nutritional needs of the horse. Savings may be realized without affecting the horse if you can utilize more of the

cheaper hay and less of the more expensive grain. Make sure that vitamin and mineral requirements are met as well.

Cold and wet weather can cause problems with hooves, colic, stable vices such as cribbing, and increase the horse's nutritional needs. As the weather gets cold, horses expend more energy staying warm. Horsemen should normally increase the feed by one or two pounds during cold weather to provide adequate energy to assist the horse in maintaining his body temperature. It is also critical to provide adequate roughage for the horse to avoid cribbing and other stable vices associated with a lack of roughage. This time of year grass is 80 to 90 percent water; therefore, grazing horses consume mostly water. Their desire to chew on something is not satisfied and cribbing often begins during times of wet weather. Horsemen should provide hay free choice to satisfy these needs and avoid potential cribbing problems.

Impaction colic also becomes more prevalent during cold weather. This normally occurs because the horse does not consume an adequate amount of water during cold weather and does not have an adequate amount of water in his digestive tract for digestion. Ideally, water should be warmed so that the horse will consume adequate amounts. Water should be available at all times.

In Arkansas, hoof care becomes critical during winter months. Many times a horse's feet become so wet that the outer covering of the foot deteriorates, which causes cracking and splitting. Mud and sand can work their way into the cracks, causing the hoof to spread even further. Every effort should be made to keep the hoof wall intact. This can be done by keeping the hoof as dry as possible and applying hoof dressing regularly. Hoof dressing is basically an oil or grease that keeps water from soaking into the foot. During wet weather, this is a very difficult task; however, it is important to maintain the hoof quality and integrity.

During the winter months, many horses are kept in closed barns and respiratory problems develop. When the barn is closed up because of rain or cold weather, ammonia, dust and stale air are trapped in the barn. Research indicates that most

of the ammonia and dust are below the level of 2 to 3 feet. This makes air quality a big problem for young horses. Therefore, it is important to have good ventilation and air flow through the barn to maintain good air quality and minimize respiratory problems.

Several management practices can assist in improving the air quality in a barn. First, the barn should be designed where the prevailing wind can move through the barn. Even though it may be cold outside, it is better to open the barn doors and have good air flow than to reduce air quality and increase the probability of respiratory problems. Second, the barn should be designed to have good

air flow through vents on the sides and in the roof to maintain air flow when barn doors are closed. Third, cleaning stalls daily and removing manure and wet bedding greatly improves the quality of the air. A fourth suggestion is to design the bottom of the stall to allow good air flow at ground level. Slatted boards at the bottom of the stall up to 4 to 5 feet are recommended to allow air flow at ground level. Wire panels or metal bars are normally recommended for the upper half of the stall.

Horse care during the winter months is important in having a sound and healthy horse later in the year.

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