

Horse Health Depends on Water

“Let your food be your first medicine” is an adage attributed to Hippocrates, the father of medicine. While he did not mention water, we know that water is essential to promote good health in horses. In fact, water—the often forgotten food—may be the “best medicine” for a number of specific ailments.

A horse’s body contains between 65 to 75 percent water. The 10 percent variation can be accounted for by differences in age and amount of body fat and muscle mass. Essential for all body metabolic activities, water is required for a number of vital physiological processes, including normal utilization and digestion of all nutrients, regulation of body temperature, muscle contraction with strength, joint lubrication and waste elimination.

What are the normal water requirements for horses? Maintenance water requirements can vary dramatically from one horse to another. For example, a horse on a fresh, early-green-growth pasture may need very little water, because they get much of their daily water requirement from the fresh grass. However, the water content of pasture grass is highly variable, making it an unreliable source of daily water.

I hear you asking: Okay, Doc, setting aside all the possible variations, just how much water does my horse need a day? The typical adult horse at 1,000 to 1,200 pounds needs 8 to 10 gallons of water each day, yet I suggest you provide the animal 20 gallons of water daily. Giving a horse access to 20 gallons of water per day supplies that built-in margin for safe equine care.

Strenuous exercise in hot climates increases the daily water requirements 2 to 3 times (or more) over maintenance. Horses at work can lose 2 to 3 gallons of water in sweat per hour; this water must be replaced continuously while performing that work. As for a nursing mare, she will produce 3 gallons of milk per day, increasing her daily water requirements by at least 3 gallons each day.

Okay, Doc, what’s the best method for providing a horse’s daily water, or how do horses actually prefer to have water given to them? A recent study using three different methods of water supply investigated drinking preferences in a group of horses. Accustomed to drinking from buckets and two different types of automated waterers, these horses drank more water per day when given water in buckets. I’m not pushing the bucket method here. We use automatic waterers at the University of Delaware, and I have used them for my own horses. Yet the research indicates clear advantages in delivering water to horses in buckets or troughs.

What horses prefer, however, does not always add up to increased water intake. For example, in very cold weather, when drinking water temperatures approach freezing, a horse's water intake will decrease. This decrease in daily water intake may lead to problems, frequently impaction colic. Early recommendations to promote increased water intake were to provide the horse with a bucket of warmed water along side its regular water. We discovered the horse preferred drinking from the cold water over the warm water, and continued to drink too little water per day. When we took away the cold water, leaving only the warm, the horse drank the warm water, actually consuming a greater quantity of water per day. So next winter, to increase your horse's daily water intake, warm up its water (warm to 60-70 degrees F.), and remove cold water sources.

We know that horses prefer water from a bucket, trough, or stream. What about free access to water versus water limited to one or two times per day? Some horse owners give their horses access to water only one or two times daily. Horses can adapt to this practice. Even in nature, wild horses typically only visit the "watering hole" one or two time a day, and in some cases, only every other day. First, understand that this is an adaptation. By that I mean it takes horses time (maybe weeks) to learn to drink all of their daily water at one or two drinking opportunities per day. Second, wild horses eat fresh grass, not hay. Fresh grass contains far more water than hay, thus decreasing the horse's need for drinking water.

A horse's stomach is small, holding just 2 to 3 gallons of food or water. Horses need 8 to 10 gallons of water per day—a need that increases with exercise, heat or lactation to as much as 18 to 24 gallons per day. You don't have to be a math whiz—a working horse, a lactating mare or a horse living in a hot environment cannot fit enough water into its stomach at one or two drinking opportunities.

Equally important to consider is the horse in training or work. Working horses require water continuously throughout their day. How long is it safe to work a horse before allowing a water break before resuming work? It depends on factors of which environmental temperature looms large. On the hot, humid days of July and August, provide water opportunities every 30 minutes. Never go longer than 1 to 2 hours, even on cool spring and fall days. If you continue to move your "hot" horses, they may drink freely as much as they desire with no adverse consequences. On the other hand, if you plan to stop activity with your horse, while it is "hot"(for example, putting a "hot" horse in a stall), do not allow the animal to drink more than a gallon at a time every 5 to 10 minutes until it has cooled or is no longer thirsty. If you keep horses moving when they are hot from work, even at a walk, problems such as colic or founder do not occur from permitting the horse access to free choice, cool water. Cool water does not mean ice water. When given a choice, horses prefer water somewhere between 45 to 70 degrees F.

Horses need clean water. Ponds are always suspect as water sources for horses and livestock. In this day and age, even streams are suspect. Water sources must be free from pollution by sewage, runoff or fertilizer/herbicide contamination. Ideally, a water source should be evaluated for purity by scientific analysis. Among the many drinking contaminants, potentially dangerous microbiological contamination can occur.

Urinary excretion of *Leptospira* bacteria by rodents can pollute water, causing abortion in mares and illness in foals and adults. *E. coli* bacteria from fecal contamination continue to be a major

problem. A severe microbiological food poisoning in the horse and mule that I saw far too frequently when I was in practice was botulism poisoning. One potential source of contamination with botulism toxin can occur in a horse's water as toxin is released when a rodent carcass ends up in the horse's or mule's drinking water. The rodent stretches to get a drink from a bucket or trough, slips into the water and drowns. The dead carcass releases botulism toxin that poisons and kills the drinking animal. Because this (and other contaminants) can find their way into a water bucket or water trough throughout the year, check your horse's water sources daily, and clean containers frequently.

In the next column, I will write about water as a defense against poor health in equines; I will cover heat stroke, heat exhaustion, dehydration and other problems prevented and/or treated by water.

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