Blanketing – Is it Necessary for my Horse?

Betsy Wagner, PhD PAS, Department of Animal Sciences, Auburn University

If you want to start a lively discussion among a group of horse owners, or people who think they know about horses, ask the question above.

People increasingly anthropomorphize horses, ascribing human qualities and emotions to an animal, and that includes perceptions of "cold weather." At the same time, horse supply catalogs this time of year feature pictures of happy, frolicking horses sporting the latest in cold-weather outerwear, subliminally convincing us that our horse too will be happy with a nice warm turnout blanket. It's no wonder there is confusion over what is appropriate.

The quickest answer to the blanketing question is, "it depends." Let's begin by examining how a horse naturally defends itself in colder weather. Then we will explore specific situations that would necessitate extra protection.

First we must acknowledge that horses and humans have different thermoneutral zones (TNZ). The TNZ is the ambient temperature range where an animal (or human) does not need to alter metabolic heat production to regulate body temperature. Obviously there are a number of variables that can influence TNZ such as body composition, activity level, and age. A human's TNZ is around 80-90°F whereas a horse is comfortable at 40-70°F.

The important number is the low end of the range, or the lower critical temperature. That is the threshold when the horse (or human) needs to make adaptations in order to regulate its body temperature. One such adaptation by the horse is relying on a thicker, longer hair coat. As the hours of natural daylight begin to wane in late summer and early fall, the horse's body responds by growing this extra layer of insulation.

Horses that have adapted to their environment, such as growing an appropriate winter coat, can tolerate much cooler temperatures. This is why a horse in a mild climate may experience its lower critical temperature at around 40°F while a horse adapted to a very cold climate (upper Midwest, for example) may not need to make additional adaptations until 5°F.

What does a horse do to regulate body temperature when it reaches that lower critical temperature? One short-term adaptation is piloerection, or the raising or bristling of the hairs, which serves to further reduce heat loss to the environment. Another change is an increase of the resting metabolic rate, which will cause the horse to increase its digestible energy intake. Research from Canada suggested increasing digestible energy intake by about 0.22 Mcal for every 1° drop below 5°F for an average horse adapted to that winter climate; this is about the amount of digestible energy found in 0.25 to 0.3 lbs. of good quality grass hay. Though we rarely see temperatures that low in the Southeastern United States, it is the basis for the recommendation of providing additional hay when temperatures drop below the lower critical temperature.

However, lower critical temperature values do not take into account heat loss due to wind or precipitation. Horses without adequate shelter and protection during cold and wet conditions may have a digestible energy requirement as great as 50 percent above maintenance. Providing adequate shelter in the form of a windbreak or run-in shed may be all the healthy adult horse needs to keep warm, provided it is adapted to that climate.

Horses that are thin, sick, very old, or very young may not be able to adequately regulate their body temperature and may benefit from blanketing. Horses that do not have a full winter hair coat, such as those maintained under artificial lighting or body clipped to mimic a summer hair coat, will need to be blanketed when the temperature drops below the TNZ. Light-weight waterproof blankets or sheets can provide additional protection from cold and wet weather if shelter is lacking. Check blanketed horses frequently to ensure they do not overheat. In addition to potentially chilling the horse when temperatures start to fall, sweat under a blanket can create an environment conducive to skin infections.

Yes, individual horses may have their own opinion on blanketing. In a recent study from Norway, researchers developed a communication system of symbols associated with different blanketing actions (blanket on, blanket off, or no change) to allow horses to choose. Preferences varied from horse to horse, though warmbloods usually chose to be blanketed more frequently than draft-types, and all horses were more likely to choose blanketing as weather conditions deteriorated.

A horse with an appropriate winter hair coat for the climate, shelter from wind and rain, and access to additional hay usually has everything necessary to keep warm even during the worst of cold snaps. There are a few situations where a horse may require a blanket due to age, health, or hair coat. Beyond that, choosing to blanket a horse is a personal decision, one that comes with additional responsibility.