Cold Weather and Horses

So far this winter, Middle Tennessee has had to endure two rounds of the dreaded polar vortex. People have been rightfully concerned about the effect this frigid weather will have on their horses. The following information is provided by Dr. Bridgett McIntosh, University of Tennessee Equine Specialist.

Cold Temperatures, Wind and Rain Increase Hay Intake for Horses

Cold temperatures combined with wet and windy conditions increase the amount of feed necessary to maintain proper body condition in horses, especially those that are kept outside. Extra calories necessary to meet the increased energy requirements of horses should first be provided by good quality hay. Feeding large amounts of cereal grains can lead to digestive disorders and upset. Feeding alfalfa or alfalfa-grass mix hay will provide more calories than grass hay alone and is safer than feeding large quantities of grain. The average horse requires about 20 lb of forage per day and winter weather can increase the amount of hay needed by 30 to 50%.

The lower critical temperature (LCT) is the lowest temperature at which horses require no additional feed to maintain core body temperature. Horses with moderate and heavy winter hair coats have lower LCT and are well suited for cold temperatures. Horses with short or wet hair reach their LCT at 60º. Horses with a moderate hair coat reach their LCT at 50º, while horses with heavy winter coats have a LCT at 30º. Heavy winter hair coats act like insulation by trapping air. If the coat is wet from rain, the ability to insulate is reduced, thus increasing the LCT. Horses that have heavy winter hair coats should not be blanket ed in most cases because it mats down the hair and reduces the horse’s natural ability to insulate against cold weather.

The best way to create heat for the horse is by increasing the amount of hay fed. As temperatures fall below the LCT hay intake should be increased by an additional 2 pounds of hay for every 10º below the LCT. For example, if the difference in temperature below the LCT is at 10º, then increase hay intake by 2lbs/day. If the difference in temperature below the LCT is at 30º, then the horse needs to increase hay intake by 6lbs/day.

Wind and rain significantly reduce the insulating ability of horses. The amount of hay fed to horses should be increased to meet the energy requirements necessary for maintaining body
temperature (Figure 3). If you have a 1,000lb horse, eating average quality grass hay, and the temperature is 32ºF, with a 10 to 15 mph wind, then you would need to increase hay intake by 4 to 8 lbs/day. If a horse is in the exact same scenario, except enduring rain only, and no wind, then hay intake should be increased by at least 6lbs/day. If a horse is in those conditions with rain, and a 10 to 15 mph wind combined, then the horse would need to increase hay intake by 10 to 14 lbs/day.

Other considerations for cold temperatures:

Large bodied horses are more tolerant because they have a lower relative body surface area per unit of weight. Newborn foals have very poor cold tolerance. Horses up to one year of age are less cold tolerant than adult horses. Mares in late pregnancy/lactation have reduced cold tolerance.

Selecting Hay for Horses

Hay is an essential part of the horses’ diet throughout the winter, when horses are stalled and when fresh pasture forage isn’t available. Hay provides fiber and nutrients that are important for proper digestion and a healthy horse.

Tips for choosing hay:

- Hay should be selected based on nutrient content and physical properties (free from weeds, mold and dust).
- Nutrient content and digestibility are lower in mature “stemmy” hays.
- First cutting hay is usually lower quality than later cuttings.
- Alfalfa hay is usually high in energy and nutrient content making it an excellent choice for horses in exercise, reproduction, lactation and for weight gain.
- Laboratory Hay Testing is the only way to determine the energy and nutrient content of hay and only costs start at approximately $20 through your County Extension Office, depending on the type of forage test you are requesting. The two tests to be offered are the Basic Equine Forage test and the Professional Equine Forage test.
- Good quality grass hay will usually meet the energy and nutrient requirements for horses at maintenance and light work with the exception of copper (Cu), zinc (Zn) and Selenium (Se). Most feed companies offer a “forage balancer supplement” designed to be fed with hay or pasture.
- Hay, pasture forage and grains are low in sodium (Na) and Chloride (Cl), which is salt, so horses should be fed white salt free choice in addition to hay and grain.

How much hay should I plan to purchase for a 1,000 lb adult horse?

- Most horses should be fed 2% body weight hay per day or 20 lb per day.
- When feeding grain for work, reproduction or lactation, horses still require a minimum of 1.5% body weight hay per day or 15 lb per day.
- If pasture is available during the growing season, plan to purchase about 75 small square bales (if 50 lb each) per horse to get through the winter months.
• If pasture is limited, or not available, plan to purchase about 144 small square bales (if 50 lb each) per horse for one year.

**Can large round-bales be fed to horses?**

• Round-bales should only be used when stored and fed under cover, or to large groups of horses that will consume the bale within a couple of days because mold will form when exposed to wet winter weather.

**Other considerations for hay:**

KY 31 Tall Fescue hay should not be fed to pregnant mares, but is safe for all other types of horses. Alfalfa should be free from blister beetles, which cause cantharidin poisoning. The bermudagrass stem fly maggot is a new pest affecting hay crops in the southeast and effects on horses are unknown, but a forage analysis should be performed to determine nutrient content of damaged hay.