The Importance of Water and Hay to Horses in the Winter
Eileen A. Coite, REINS Coordinating Agent

With the brisk temperatures and frequent fluctuations of our North Carolina winter weather, it’s always good to remember how critical these changes can be to our equine companions. If you’ve been in the horse business long enough, you have probably encountered a horse experiencing colic due to temperature changes. Keeping horses warm and hydrated in the winter, as well as in good body condition can be a challenge. Key factors in achieving this are providing shelter from the wind and rain, along with plenty of clean water and good hay. Here are some things to consider this week and as the winter progresses.

Maintaining ample water intake is the most critical part of ensuring the health of your horse during cold weather. The horse prefers a water temperature of 45-65°F. Under normal conditions, the horse will consume one gallon of water per 100 pounds of body weight per day. An 1100 pound horse will consume 10-12 gallons of water daily. As the water temperature decreases, horses will consume less water. An 1100 pound horse may consume as little as 1-3 gallons of water per day when water temperature is 32°F.

Low water intake is directly related to the increased incidence of impaction colic. Water intake can be encouraged by increasing the amount of forage being fed prior to a drop in temperature. The resulting increase of dry matter encourages the horse to drink more water. Concentrate mashes can also be fed during the actual cold period when water temperature is below 45°F. Feeding 2-3 gallons of hot water mixed in a mash with a textured or pelleted concentrate mix will provide additional water intake. To

(Continued on page 2)
avoid gas colic, allow for the mash to sit for 15 minutes. This will permit the feed to expand prior to feeding. If possible, offer 10 gallons of water (at 65°F or warmer) twice daily. Break and remove ice from water tubs, making certain to provide water that is available free choice.

Providing good quality, nutritious hay is another critical aspect to winter management of horses. This is the time of year where hay supplies sometimes get thin, so planning ahead and purchasing enough hay to get through the winter is critical. When temperatures get below freezing, winter pasture growth reduces tremendously, and hay is our only forage option. Horses, along with other grazing animals, need hay to stay warm. Hay and other forages are digested in the cecum and large intestine of the horse, and this digestion process is the primary source of regulating body temperature. Many horses can maintain their weight through the winter with just an increase in hay consumption. Those that are harder to keep weight on or older will often need a gradual increase of grain as well. Horses should consume at least 1.5% of their body weight in hay during cold periods. For example, a mature 1000 pound horse should consume 15-18 pounds per day of hay to meet these temperature needs in cold weather. It’s important to pay close attention to body condition during these periods, and actually “feel” your horse. A long hair coat or winter blanket can often cover up thin spots on a horse, so be sure to examine your horse closely and get a feel for where your horse’s ribs, backbone, etc. are and how much fat or “cover” there is over and around them. If a horse given plenty of hay is having trouble maintaining weight, increasing fat to the concentrate diet may also be helpful. Many “high fat” feeds are on the market just for this purpose.

These are just a few tips to help you and your horses get through these brisk winter days. For more information or advice, don’t hesitate to contact the Extension office or one of your REINS volunteers.

As with people, horses can have dental problems that affect their entire wellbeing. Problems that are left untreated may not only affect your horse’s health now but may have far reaching affects into your horse’s health into old age.

Has your horse recently become . . .

- Hard to keep when he used to be an easy keeper?
- Hard to ride due to head tossing or shaking?
- Irritable or fussy with the bit?
- Behind the bit or tucks head to avoid bit contact?
- A sloppy chewer at mealtime, dribbling bits of half-chewed food?
- A drooler, salivating excessively while eating?
- A slow eater, taking unusual effort to eat?

- Sensitive about having the muzzle or head handled?

If you answered “yes” to any of the above questions, I encourage you to make an appointment with your vet or equine dentist to have your horse’s teeth checked.

Over time horse’s teeth can develop razor sharp points that can cut into their cheeks, causing pain and ulcerations. These points can make eating difficult or even painful. Imagine adding a piece of metal to an already sore mouth. By having the teeth “floated,” the vet/dentist will rasp off the excess tooth material and create a more level surface to grind food.

Sometimes the canine teeth—the pointy ones behind the front teeth—will need to
be shortened if they press into the opposing gums.

Wolf teeth—small pre-molars in the upper jaw—may also cause significant discomfort and need to be removed so they won’t interfere with the bit.

Young horses will often be uncomfortable when they shed their “baby” teeth. They may have obvious lumps under their jawbones while the new teeth try to come in. Sometimes a youngster may benefit from having those old baby tooth “caps” removed by a vet or dentist.

Horses between the ages of 2 to 5 years require the most frequent care. They have a large number of adult teeth coming in. “Baby” teeth tend to develop points faster than adult teeth.

Horses over the age of 5 and into their teens should have their teeth checked at least once a year even if there are no signs or symptoms of problems.

Horses in their 20’s that no longer have teeth erupting may experience uneven wear patterns that may be impossible to correct if they did not receive proper dental care earlier in life that helped maintain an even bite.

We all know how miserable we are when we have a toothache. Imagine your equine friend feeling the same way. Consult your vet to discuss the dental needs of your particular horse and make an oral exam a part of your preventive health care.

Effective De-worming Practices
Will Walls, Johnston County

De-worming horses used to be simple: the vet did it. Now, for better or for worse, most of us do it ourselves. The good news is that de-worming has become more convenient and less expensive. On the downside, improper use of these drugs is causing some parasites to develop resistance. De-worming can be confusing and even intimidating. How are we supposed to know what to do? Let’s take some of the mystery out.

Elements of parasite control. De-worming is an essential element of effective parasite control for overall horse health. The other elements include monitoring your horse’s fecal egg count and managing your horse’s environment, both at home and on the road. We’ll cover these elements in future articles.

Partner with your vet. Before you start a de-worming program or make major changes to your existing program, talk to your vet. If you aggressively kill large numbers of parasites quickly, you can create serious problems for your horse such as impaction colic. If you have an ineffective program or follow improper procedures, you can make the parasite resistance problem even greater. Your vet will be able to advise you on what to do and how to do it.

Drug chemical classes. As a starting point, let’s explore the three main class of drugs used in equine parasite control: Macrocyclic Lactones (Ivermectin and Moxidectin), Benzimidazoles (Oxibendazole, Fenbendazole, and Oxfendazole), and Pyrantels (Pyrantel Pamoate and Pyrantel Tartrate). All three classes will control pinworms, roundworms, and some stages of large and small strongyles. The Macrocyclic Lactones are also effective against threadworms (neck and intestinal), lungworms, large-mouth stomach worms, hairworms, and bots. With the addition of praziquantel, they can control tapeworms as well.

Parasite resistance. Because of their broader coverage, the Macrocyclic Lactones are the most common drugs administered. We are starting to see some resistance by roundworms. The Benzimidazoles are becoming less effective as small strongyles are showing resistance. Roundworms and small strongyles are showing resistance to the Pyrantels.

Combating resistance. The first key to combating these developing resistances is to rotate the chemical classes when you de-worm. Because these drugs are sold under a variety of trade names, be absolutely certain you are rotating...
chemicals and not just rotating products. There’s a big difference so read the labels and make sure you know what you’re giving your horse. The second key is to ensure your horse is getting the proper dose. If you underestimate the horse’s weight, you won’t be giving him enough. If your horse spits out the drug, you will also be underdosing him. Low dosages help the parasites survive and develop a resistance. The third key is to pay attention to the season of the year when the chemicals will be most effective against particular parasites. Botflies, for instance, start to appear in late summer and continue active until solid freezes put an end to them. Wait until the flies are no longer active before treatment.

**Rotation plan.** No single de-worming rotation plan will work everywhere because climate has such an influence on the life cycle of these parasites. The wide variety of climate zones found in North Carolina from the coast to the mountains means that horse owners will be most successful in working with their vets to develop a rotation plan for their farm.

**Climate.** When daytime temperatures remain below 45 degrees, parasite larvae and eggs are dormant. Temperatures above 85 degrees will kill parasite larvae in your pasture. Clearly spring and fall are the seasons of greatest concern for you and your horse.

**Daily de-worming option.** One procedure that is becoming increasingly popular is de-worming daily using pyrantel tartrate sprinkled on feed. In addition, de-worm twice yearly with ivermectin or moxidectin, being sure to include a praziquantel product at least once for tapeworm control.

**Periodic rotational de-worming.** Others choose to de-worm on a two-month schedule, rotating chemical classes. As a starting point for working out a schedule with your vet, consider something like this:

<table>
<thead>
<tr>
<th>Month</th>
<th>Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan/Feb</td>
<td>Benzimidazoles</td>
</tr>
<tr>
<td>Mar/Apr</td>
<td>Pyrantel pamoate</td>
</tr>
<tr>
<td>May/Jun</td>
<td>Macrocyclic Lactones</td>
</tr>
<tr>
<td>Jul/Aug</td>
<td>Benzimidazoles</td>
</tr>
<tr>
<td>Sep/Oct</td>
<td>Pyrantel pamoate</td>
</tr>
<tr>
<td>Nov/Dec</td>
<td>Macrocyclic Lactones with praziquantel</td>
</tr>
</tbody>
</table>

The exact details will depend upon the level of risk to your horse, your climate, your preferences for how to administer the drugs (daily or rotationally) and most importantly, your vet’s recommendations.

### Kid’s Corner...

#### Invisible Horses

Circle the horse word hidden in each of these sentences. Look for words from the list, but be careful! There are extra words in the list that aren’t used.

1. In the stall, I only talk quietly.
2. Ken rode Opal into town today.
3. Suzy feeds Romeo at six o’clock.
4. It’s true—dry hay will not rot!
5. A man eats differently than a horse.
6. Silver can’t spin to the left.

**Word List**

- Hoof
- Mane
- Oats
- Colt
- Pinto
- Rodeo
- Canter
- Trot
- Stallion

**Answers on page 7**

Although there are horses in Australia now, this wasn’t always the case. Australia is the only continent on the planet where no horse fossils have ever been found.
February is Horse Health Awareness Month
Join Us for our Annual Equine Health Clinic

Saturday, February 28th - 1:00 to 4:00 pm
Wayne County Regional Fairgrounds

Vaccinations & Coggins Test will be given by
Dr. Owen Martin, DVM - Faison Animal Hospital

Please pre-register by calling Kim Davis at the
Cooperative Extension Office at 731-1520

Pre-registration is critical to ensure enough vaccines are available.

*Prices available upon request.

Forage Management Tips

January

- If winter pasture is limited, feed hay in the pasture or allow cows to graze every other day. The priority for limiting pasture is (1) calves by creep grazing, (2) stockers, (3) nursing cows, and (4) dry cows.
- Keep animals off newly planted winter annuals during wet periods to prevent damage. Allow calves first priority to graze.
- Sample hay bales which are stored outside that will be fed during the next four to eight weeks.
- Decide which fields will be re-seeded or overseeded during late winter and early spring; obtain soil test and supplies for planting.
- Lime may be applied during this off season.
- Keep a record of winter weed problems so that control measures can be taken next fall. This is the latest month that some herbicides may be used on legumes.
- Determine animal feed requirements for the year (about 6 tons of hay equivalent/cow-calf pair) and outline a 12 month forage production and use plan to meet the needs.

February

- Apply nitrogen to cool-season grasses to stimulate early spring growth.
- Overseed legumes, such as ladino clover, into well-grazed (2 inches or less) grass pastures.
- Lime fields for spring plantings.
- Divide pastures to improve the quality and persistence of pasture plants.
- Locate sources of hybrid bermudagrass sprigs for planting.
- Burn warm-season grass residues in late February.
- Get herbicide sprayers ready to control weeds in dormant bermudagrass fields.
2008 Extension Horse Short Course and Clinic Series

- January 24th, NCSU Advanced Level Horse Breeding Short Course
- February 26th, NCSU Horse Facility Short Course
- February 27th, NCSU Business Management for Horse Farm Operators Short Course
- February 27th - March 1st, VA/NC Volunteers Leaders Conference
- March 2nd, Introduction to Animal Cruelty Law
- March 3rd - 5th, Equine Investigators Short Course
- March 13th - 14th, NCSU Equine Hoof Care and Shoeing Short Course

To receive a short course and clinic brochure and pre-registration forms contact:
Extension Horse Husbandry, NCSU, Box 7523, Raleigh NC 27695-7523
Phone: (919) 515-5784 - Fax: (919) 515-8518

REINS Volunteers by County (Volunteers may be contacted via Extension Agents)
Johnston County: Michele McLaughlin, Julie Walls, Will Walls & Roger Davis
Wayne County: Jerry Boone, Lynn Lepley, Vivian Rowe, Cindy Wheaton & Vickie Yelverton
Wilson County: Carol Kyles & Kathy Moore

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Hoof Prints is a quarterly newsletter written by a team of experienced and certified equine professionals for persons interested in equine information in Southeastern North Carolina. For more information on material and events presented in this newsletter, contact your local agent and Cooperative Extension office at:
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