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Horse News

December 2006

Inside this issue:

	Page
2007 Extension Horse Short Course/Clinic Series	2
Winterizing Your Horse Barn—Prevention of Barn Fires	3
Do You Have “Horse” Quality Hay?	4
Routine Health Care for Horses	5-8

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2006-2007 Extension Horse Short Course and Clinic Series

Offered by:

North Carolina State University

Proudly co-sponsored by

The North Carolina Horse Council

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January 5-7	NCSU Horse Judging Course-Advanced Level* Extension Horse Husbandry Office, Raleigh, NC
January 13-14	NCHC Horse Training/Riding clinic Gov. James B. Hunt complex, Raleigh, NC
January 27	Carolina Horse Management and REINS Conference
February 3-4	NCSU Horse Show Judges' Certification Clinic Gov. James B. Hunt Complex, NC State Fairgrounds, Raleigh, NC Sponsored by Southern States Cooperative
February 3	NC Youth Horse Judging Team Training Clinic Jim Graham Building, Wake County Government offices or Vet School, Raleigh, NC Sponsored by the NC 4-H Horse Program
March 9-10	NCSU Equine Hoof Care and Shoeing Short course I & II Extension Horse Husbandry, NCSU Equine Educational Unit, Raleigh, NC Sponsored by: Zin Pro Corporation and the NC Horse Shoers' Assoc.
April 7-8	Carolina and Virginia 4-H Horse Leaders Conference Camp Betsy Jeff-Penn, Reidsville, NC Sponsored by the NC and VA 4-H Horse Programs
May 7-9	Horse Protection Officers Short Course NCSU Equine Educational Unit, Raleigh, NC Sponsored by Orange County Animal Protection Society

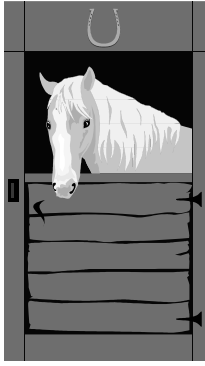
Detailed course info available on-line at www.nchorsecouncil.com

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Winterizing Your Horse Barn -- Prevention of Barn Fires³

Gary Heusner
Extension Equine Specialist

We often spend a great deal of time "winterizing" the horse. We become concerned about respiratory diseases, special foot care, making sure plenty of water and forage are available and providing adequate shelter. Sheltering horses usually involves putting them in some type of barn. When you think about winterizing your horse you should probably think about winterizing your barn also. A major consideration in winterizing your barn is emphasizing fire prevention. One rule of thumb is that a fire involving combustible materials (wood, straw, hay, shavings, etc.) doubles in size every minute. Therefore, in ten minutes, the fire will increase in size by 4,086 times. What should a person do to winterize a barn to prevent fires? Following are some practices or items to check:

- No smoking around barns ever. Post signs and enforce them at all times.
- Housekeeping: Keep barn aisle ways clear of clutter; brush down cobwebs; store flammable materials outside of the barn; have a separate facility for hay and straw if possible.
- All light bulbs should have a metal mesh cage around them. This is not only to prevent horses from breaking bulbs, but also to prevent straw or hay from landing on a hot bulb and setting the material on fire, which may fall to the ground and ignite other combustible materials.
- Faulty electrical wiring and connections are the leading causes of barn fires. Wiring should meet local building codes.
- Electrical wires should be in conduit pipes so horses and rodents cannot chew through the protective insulation for the wire. Horses should not have access to conduit. Have an adequate electric fuse box in the barn with easy access in case of a fire or other problems.
- Never use extension cords or multiple-plug strips in the barn. Disconnect coffee pots, radios, fans, portable heaters' and other electrical appliances when not in use.
- Have an adequate water supply and pressure. Make sure there are an adequate number and length of water hoses to reach all areas of the barn.
- Plan and practice a horse evacuation plan. Remember if horses are taken out of a burning barn and turned loose, they will often run back into a burning structure. Therefore, make sure there are adequate holding pens or an area which horses can be confined when removed from the burning barn.

Horse barn fires can be devastating. It does not take long for an entire barn to burn down with major economic loss as well as the loss of horses.

Do You Have "Horse" Quality Hay?

Gary Heusner, Ph.D.

4

Extension Animal Scientist - Equine

What is "horse" quality hay? Horse quality hay is any hay that provides the horse the most nutrients, is free of mold and toxic weeds, is relatively dust free, the horse eats it, and the price is the lowest per unit of nutrient.

The reason a horse needs forage (grass or hay) is that it is a nonruminant herbivore. That is the horse was designed to consume and digest forages to supply nutrients (energy, protein, minerals, vitamins). The horse has a hindgut (large intestine) that contains a population of microorganisms, similar to the microorganisms in the cow's rumen, that breaks down plant (roughage) material that has not been digested by the enzymes of the small intestine. Because the horse's digestive system is designed as such it needs a certain minimum amount of "roughage" in the diet per day. Most equine nutritionists recommend that a horse consume at least 1% of its body weight per day in hay equivalent dry matter to maintain normal digestive system function. Another concern relating to normal digestive function and normal behavior associated with roughage and the fiber portion of the diet is that it appears a horse has a certain daily "chew factor". If a roughage source is fed as a pellet or chopped to a length of less than an inch the horse will not have to chew the roughage as long. Therefore less saliva is produced which has been shown to affect the ph (acidity) of the large intestine. It has been demonstrated that lowering the ph of the hindgut will affect the type of microorganisms present. In addition it is thought that when a horse's minimum daily "chew factor" is not met that the horse may begin to look to chew on other objects such as wood, manes, and tails. This may be due to too little fiber and the corresponding change in gut ph, boredom (the horse simply may need to do something) or a combination of factors. Whatever the reasons it is important that the horse does meet its "chew factor" requirement.

The main nutrient supplied by hay to horses is energy. Energy requirements for the horse are expressed as megacalories of digestible energy. For example an 1100 pound horse being ridden lightly requires 20.5 megacalories of digestible energy per day. A high quality Coastal Bermudagrass hay as shown in Table 1 will contain 0.9 megacalories of digestible energy per pound on a 100% dry matter basis. If the hay is 90% dry matter that means that as the hay is fed out of the bale it will contain 0.81 megacalories of digestible energy per pound. Therefore to meet the 1100 pound horse's energy requirements being ridden lightly the horse would need to consume 25.3 pounds of hay. A horse can consume up to 2.25 to 2.5% of its body weight in forage dry matter per day.

The problem of determining hay quality for horses based on energy content of the hay is that routine laboratory analyzes do not provide digestible energy values. Instead a typical routine forage analysis will provide crude protein, neutral detergent fiber, crude fiber, moisture, and possibly some mineral analyses. It is well documented that as a plant matures crude protein values decline and fiber values increase. Along with the advancing maturity of a plant the digestibility decreases and therefore the digestible energy value decreases. Therefore the higher the neutral detergent and crude fiber values the lower the digestible energy values.

I have attempted to simplify all of the above by putting "Relative Feed Values" on various types of horse hays fed in the southeastern United States. Most all hays are compared to alfalfa so I have put a relative feed value of 100 on a high quality alfalfa. I have listed three levels of relative feed values as well as digestible energy values for each type of hay so that there are three categories into which a hay may fall; excellent, average, and poor quality. Of course this table is useless unless the hay is analyzed for at least dry matter, crude protein, neutral detergent fiber and/or crude fiber.

Table 1. Approximate digestible energy and relative feed values of hays for horses. (100% Dry Matter Basis)

Hay	Crude Protein %	Neutral Detergent Fiber %	Crude Fiber %	Digestible Energy Mcal/11b	Relative Feed Value
Alfalfa	>20	<30	<23	1.2	100
Alfalfa	16-18	30-47	24-28	1.1	92
Alfalfa	<15	>47	>28	1.0	83
Coastal Bermudagrass	>12	<65	<30	0.9	75
Coastal Bermudagrass	8-12	66-72	31-35	0.8	67
Coastal Bermudagrass	<7	>72	>35	0.7	58
Bahiagrass	>9.5	<68	<32	0.75	63
Bahiagrass	7-9.5	68-75	32-36	0.7	58
Bahiagrass	<7	>76	>36	0.6	50
Fescue	>12	<65	<26	0.95	79
Fescue	7-12	66-70	27-30	0.83	69
Fescue	<7	>70	>30	0.75	63
Orchardgrass	>12	<60	<26	0.99	83
Orchardgrass	7-12	60-65	26-30	0.85	71
Orchardgrass	<7	>65	>30	0.75	63

Routine Health Care for Horses

Health and well being in animals cannot be achieved by use of vaccines and feed additives alone. Healthy horses are fed well and kept in facilities in good repair. They are seen by their caregivers often, and small problems are not allowed to become big ones. Healthy horses also receive animal health products that have been properly stored and are used according to label directions. The three most frequent veterinary complaints in horses are colic, lacerations and lameness. Special attention should be paid to preventing these problems. Horse health care need not be expensive but does need to be comprehensive.

Disease control in horses is effective only when several general areas of disease control are implemented.

Sanitation

Sanitation means that environmental conditions are compatible with health. Everything the horse comes in contact with is clean and in good repair. Having feed and water containers that can be cleaned on a weekly basis limits the horse's exposure to microorganisms. Also, this promotes water intake by providing a more palatable water source. Regular manure removal from housing or loafing areas reduces parasite and fly populations, particularly when pasture rotation is practiced. Prompt and safe disposal of agricultural chemicals will prevent accidental poisonings. Keeping fences in good repair will limit the incidence of lacerations. Regular cleaning of blankets, brushes and halters will help prevent certain skin diseases.

Feeding

The feeding of a palatable, balanced diet is important to a horse's health. Poor nutrition makes a horse less able to build immunity and more susceptible to disease. Also, most colic can be traced to feeding errors, such as rapid changes in feed and feeding more than 50 percent of the horse's diet as concentrate. Most horses should be maintained in a body condition score of 5 or 6.

Horses are grazing animals that spend most of their time eating. A good diet is based on plentiful, good quality pasture or hay. Grain or grain mixes can be added in the amount necessary to improve or maintain the horse's body condition. A horse will eat up to about 3 pounds of total feed per 100 lbs. of body weight. A horse should be fed .25 to 1.5 pounds of grain or grain mix per 100 pounds of body weight based on the horse's age and body condition. Grain can be fed once or twice a day depending on the amount fed. Hay is fed to make up the rest of the horse's diet, and a horse should receive at least 1 percent of its body weight per day. Complete horse feeds, if used properly, can replace some or all of a horse's roughage needs.

For example: a 1,000-pound horse in poor condition will eat 30 pounds of feed per day.

$$\begin{array}{rcl}
 1000 \text{ lb} \times 1.5 \text{ lb} & = & 15 \text{ lb of grain/daily} \\
 \text{Of grain per 100 lb} & & \\
 \text{Hay (1/3 bale daily)} & = & \frac{15 \text{ lb}}{30 \text{ lb total}} \text{ hay/daily}
 \end{array}$$

Any change in type or amount of feed needs to be made gradually over a 5-10 day period of time.

Housing

Good animal housing should provide uncrowded shade and shelter while retaining adequate ventilation. Generally, horses are healthier if allowed free access to shelter, as opposed to being forcibly confined. Horses stabled for more than 12 hours per day tend to have more problems with respiratory disease and colic.

Disinfection

Disinfection is defined as the killing of microorganisms. Disinfectants don't work well in the presence of dirt or manure so thorough cleaning is necessary before disinfection. Disinfection of a stall between animals is a good way to prevent the spread of microorganisms.

Isolation

Isolation of new arrivals on the farm for 30 days allows the new animal time to get over any disease which it brings with it.

Isolation of sick animals reduces the spread of contagious diseases.

Careful, regular observation of animals results in disease being noted earlier when it is easier to treat more successfully. Accurate diagnosis allows accurate treatment. Prompt treatment increases the likelihood of a favorable outcome.

Health Products

The proper use of animal health products is necessary if they are to be effective. Use products that are federally licensed. After purchase, the product should be stored according to label directions. All products should be given only according to label directions. If all these are done, the product will be both safe and effective.

Horse health products can be used as either investments or as insurance. When used as an investment, it is assumed that the cost of the health products is less than the cost of disease. We use horse health products as insurance when we use them to minimize the risk of ill health although we realize the chance of our horse getting the disease is small or unknown. Combination vaccines work well and save needle sticks.

Vaccinations

Vaccinations for the “**backyard**” horse having little exposure to other horses. Vaccines are given in the spring.

- Tetanus toxoid is a very effective vaccine which protects against a very deadly disease. The first time a horse is vaccinated, it should be given a booster in 4-6 weeks. Or as directed. Annual revaccinations is required. Revaccination after a wound that penetrates the skin is also well advised.
- Spread by insects, Eastern and Western encephalitis are a problem in warmer months. Encephalitis vaccine is generally combined with tetanus vaccine and should be given in the spring before insects are a problem. These so called three-way vaccines are safe for all horses. The first time a horse is vaccinated it should receive a booster does about one month later. Annual revaccination is necessary.
- West Nile Virus vaccine is also given in the spring. This vaccine is available only from veterinarians and is available in combination vaccines.
- Many veterinarians recommend that these vaccines be given again in July or August in the South.

Vaccines for **horses exposed to many other horses**

- Tetanus toxoid
- Eastern, Western and West Nile Encephalitis vaccines
- Equine influenza produces fever and cough for 2-3 weeks. Several strains of the virus exist. “Flu” vaccine can be purchased alone or in combination to be given I/M or intranasally. The first year the vaccine is used a booster vaccination should be given 2-4 weeks later. To be fully effective in horses constantly exposed, revaccination every 60-90 days is recommended for intramuscular vaccines. Intranasal flu vaccines are given every 6 months.
- Rhinopneumonitis (EHV) produces abortion and respiratory symptoms in horses. Three types of vaccines are available, and vaccination and booster recommendations vary. Generally, after the initial vaccination series, boosters are given every 2-3 months. This vaccine is available alone or in combination.
- Potomac horse fever vaccines should be used particularly in horses traveling to the eastern seaboard or other areas where the disease is a problem. After initial vaccination, a booster should be given in about 1 month. This vaccine should be repeated three times a year in February, May and August. PHF vaccine is available alone or in combination.

Vaccines for the **broodmare**

- A special Rhinopneumonitis vaccine is available to prevent some abortions in mares. These vaccines should be given at the 5th, 7th and 9th month of each pregnancy.
- Eastern, Western and West Nile Encephalitis, tetanus, and influenza vaccines (usually killed vaccines) should be given one month before foaling.

When the **mare was not vaccinated in late pregnancy**, the foal should receive tetanus antitoxin shortly after birth.

- At 3 months of age, begin initial series of encephalitis and tetanus.
- At 8 months of age, begin initial series of flu and rhinopneumonitis vaccine.

Foals from vaccinated mares should begin tetanus and encephalitis vaccine series starting at 5 months of age.

Other vaccines are sometimes used in horses in response to **special situations**.

- Strangles vaccines are used in a series in young horses exposed to other horses carrying the *Streptococcus equi* bacteria. Newer intranasal vaccines seem to result in fewer side effects. Horses at risk should be vaccinated twice a year beginning 2 to 4 weeks before exposure. Intranasal vaccines should not be given within 6 months of giving intramuscular vaccines. Intranasal strangles vaccine should not be given at the same time other vaccines are given.
- Rabies vaccines are frequently recommended in areas where this fatal disease of horses occurs.
- An Equine Protozoal Myelitis vaccine is now available. This vaccine is available only from vets and is conditionally licensed.

Parasites

Internal parasites, a real problem in horses, are associated with poor weight gain and an increased incidence of colic.

Most authorities would recommend that horses be dewormed from two to six times a year. Probably four times a year is adequate for most adult horses. December, March, May and September are good times to deworm. Young horses should be dewormed monthly.

Recently, tapeworms have been associated with colic, particularly in older horses. Several horse dewormers containing Praziquantel, a safe and effective product for tapeworms, are now available. General recommendations are to treat for tapeworms once or twice a year in the spring and/or fall.

Rotating dewormers may help reduce parasite resistance. There are four chemical classes of dewormers available for use in horses. To truly rotate, use different classes of dewormers, not just different brand names. The chemical classes of dewormers and some of the brand names available are listed here:

Class	Brand Names
Benzimidazoles	Equicide Benzelmin Safeguard Panacur Rintal Cutter paste Anthelcide Equi-cide Others
Macrocylic Lactones	Eqvalan Rotectin I Equimectrin Zimectrin Quest Ivermectin 1.87% paste Zimectrin Gold (with praziquantel) EquiMax (with praziquantel) Combo Care (with praziquantel) Quest Plus (with praziquantel) Many others
Pyrantels	Strongid & Strongid C Rotectin II Equine Wormer Pellet Others
Organophosphate	Dichlorvos

Pasture rotation, drug harrowing, regular manure removal, and “worm and move” programs can help in parasite control.

Other Routine Horse Care

- Horses require regular foot care. Find a farrier and allow that person to use their knowledge and skills. Most horses have foot care every 6-12 weeks.
- A Coggins test is a blood test to detect Equine Infectious Anemia. There is no vaccine or treatment for this disease. Some horses, such as those at boarding stables or horse shows where they commingle with other horses, are required by state law to have an annual negative Coggins test. Horses that travel around the state are also required to have an annual negative Coggins test. Finally, horses that are sold are required to have a negative Coggins test within the 6 months prior to the sale. Failing to comply with state regulations for Coggins testing can result in quarantine and/or fines. All horses should have blood drawn annually (in the early spring) for a Coggins test.
- Horses should have their teeth checked annually for abnormal wear. Some horses develop sharp edges on their jaw teeth, which can make eating uncomfortable. A special file called a dental float is used to remove these sharp points. This process is referred to as “floating”.
- State animal cruelty law requires that all animals be provided with “necessary feed, water, shelter and care.”

