

EQUINE LINE



Volume 5, Issue 1 January-February 2011

Equine Environmental Stewardship Program



This Equine Environmental Stewardship short course will provide information and "hands on" learning experiences designed to provide you with the knowledge and skills necessary to develop sustainable and environmentally sound farm management practices.

The course will include four evening classroom sessions and a pasture walk. All classroom sessions will be offered from 7:00 - 9:30 pm at Cornell Cooperative Extension Orange County in April and May. (The pasture walk date and time to be determined).

Cost for the series is \$50 per person, which includes light refreshments each session, an information resource notebook, and a soil testing kit (Participants will each receive a soil test kit for use on their own equine pasture). Deadline for registration is Friday, April 1, 2011.

For more info contact Audrey L. Reith, Equine/Livestock Educator at 845-344-1234 or ald5@cornell.edu.
To register contact Cathy at 845-344-1234 or cah94@cornell.edu.

Dates & Topics:

SESSION 1 - April 4, 2011, 7:00 - 9:30 PM:
**The Grass is Always Greener -
Forage Management**

SESSION 2 - April 18, 2011, 7:00 - 9:30 PM
Weed Control and Pasture Management

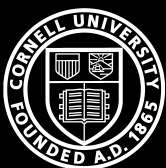
SESSION 3 - May 9, 2011, 7:00 - 9:30 PM
Soil Fertility Management

SESSION 4 - May 23, 2011, 7:00 - 9:30 PM
**Nutrient Management and
Environmental Regulations**

SESSION 5 - Date/Time/Location TBA
Pasture Walk

In This Issue:

Equine Environmental Stewardship Program	1
Rondout Grad Shines at World Cup Dressage Final	2
Winter Care for Horses	2
Goshen Historic Seeks Help To Complete New Barn	4
Horse Disposal Options	5
Recent EPM News Update	6
Reducing Risk of EPM	7
Regional Horse Council Updates	7



Cornell University
Cooperative Extension
Orange County

Agriculture
Family & Consumer Sciences
4-H Youth Development

18 Seward Avenue, Suite 300
Middletown, NY 10940-1919
845-344-1234
Mon.-Fri., 8:30 AM - 4:30 PM
www.cce.cornell.edu/orange

Rondout Grad Shines at World Cup Dressage Final

By Dave Hines: Daily Freeman: Saturday, December 18, 2010

FRANKFURT, Germany - Stone Ridge's Meagan Davis finished sixth on Friday to guarantee the best finish by a United States rider in the history of the FEI World Cup Dressage Final for Young Riders. Davis, 21, and Bentley, her 17-year-old Danish Warmblood, were sixth in Friday's Individual Test to maintain their placing after Thursday night's Team Test.

The top seven riders after the two placing rounds qualified for tonight's A Freestyle Final, with the other finishers going forward to today's B Final. "I can not tell you how proud I am of Meagan," Davis' coach, former Olympian Lendon Gray, said on her blog following Friday's competition. "She is representing the U.S. so beautifully."

Davis, a 2008 Rondout Valley High graduate, was competing despite a serious chest cold and also had to work around Bentley's well-documented quirky behavior, which was ratcheted up another notch before Thursday's opening event due to the noisy conditions before heading into the oversized competition arena, and the snowy weather outside blowing the fabric walls of the warm-up tent. "Bentley was more on edge than I had ever seen him," Gray wrote. "(He) used himself up with all the nervous energy of the warm-up and he just deflated during the test."

"No mistakes, just no oomph."

Friday's Individual Test was also somewhat off. "The ride (Friday) was much better," Gray wrote. "still not as powerful as usual. Meagan handled it so well. It is very good for an American to beat some of the Europeans on their home ground." Davis was the top non-European finisher, with a score of 66 percent. Germany's Sanneke Rothenberger and Deveraux OLD led with 76.8 percent. There were 14 rider-horse combinations from 13 nations that competed at the World Cup. She and Bentley were the lone American representative at the World Cup and qualified for the event by having the highest average in the FEI Young Rider Freestyle Test in U.S. competitions during 2010.

She and Bentley teamed to win their first national championship at the Collecting Gaits/United States Equestrian Federation Festival of Champions in August. The event was Davis' first competition outside North America and only her second international event, having burst onto the equestrian scene with a win in the Dressage International de Quebec in July 2002 in Blainville, Canada.

Winter Care for Horses

Kathy Anderson, Extension Horse Specialist,
University of Nebraska

Proper horse care and management during the winter is essential. As it becomes colder, the horses requirements for energy, shelter and hoof care begin to change. This article explains the different requirements horses have during the winter and practices horse owners can do to meet those requirements.

As the weather turns cold, many horses are ridden less and less. It is easy to become relaxed in a horse's daily care since they are not being used as often. However, horses still require much care and attention throughout the winter.

Effects On Energy Requirements

Falling temperatures, wind and wet conditions cause a tremendous demand on the horse's body for heat production. How much body condition a horse loses depends on the severity and duration of the cold season and the amount of energy the horse receives from its feed. As with all warm-blooded animals, horses must maintain their body temperature to survive. The environmental temperature and the heat produced within the body determine the extent to which heat must be conserved. The body does little to regulate heat generation and heat loss when the environmental temperatures are within ranges of the animal's comfort zone or the "thermal neutral zone." As environmental temperatures fall below the minimal temperature of the comfort zone, or "critical temperature," heat production is increased by the body speeding up chemical reactions, which produce heat.

The critical temperature can be used to estimate changes in a horse's nutritional requirement relative to falling temperatures, cold winds and wet hair coats. Estimates for the lower critical temperature for horses are between 30 and 50 degrees Fahrenheit, depending on hair coat, body condition, wetness and wind chill. The critical temperature for cattle ranges from 18 degrees F for dry weather and heavy hair coats to 59 degrees F for animals with summer or wet hair coats. Estimates for the lower critical temperatures for horses are given in Table I.

Table 1: Estimated Lower Critical Temperature for Horses in Moderate Body Condition

Hair Coat	Lower Critical Temperature (F)
Wet or Short	60
Moderate	50
Heavy	30

For each decrease in coldness of 1 degree Fahrenheit below the critical temperature, there is an increase in digestible energy requirements of 1 percent for body temperature maintenance (Table II). The best estimate of



coldness is wind chill temperature, as this combines the effect of temperature and wind. For example, a horse with a heavy winter hair coat has an estimated critical temperature of 30 degrees F (Table I). Thus, if the wind chill is 20 degrees F, the horse would have an increased energy requirement of 10 percent or 2 Mcal/day and should consume approximately 2 additional pounds of hay per day (Table II). This 1,000-pound horse should already be consuming approximately 15 pounds of hay per day and now should consume 17 pounds of hay to avoid any loss of body condition. Wet weather combined with wind greatly increases a horse's energy needs (Table III). A horse in 32 degree F weather, without shelter and subjected to rain and 10 to 15 miles-per-hour wind, would need to consume an additional 10 to 14 Mcal per day or a total of at least 25 pounds of feed. Some horses would not be able to consume this volume of feed in hay alone.

Table II: Estimated Feed Energy Increase at Different Magnitudes of Cold Below the Lower Critical Temperature of Mature Horses

Difference in F Below Critical Temperature	Digestible Energy Increase (Mcal/day)	Feed Intake Increase (lb/day)
0	0	0
10	2	2
20	4	4
30	6	6
40	8	8

Assuming an energy density of 1.0 Mcal/pounds, which is typical of many hays.

Table III: Effect of Wind and Rain on Digest Energy Requirement for Horses at Maintenance

Average temp.		Add'l Mcal/day	Add'l Hay
32 °F	10-15 mph wind	4-8 Mcal/day	4-8 lbs. of hay
32 °F	rain	6 Mcal/day	6 lbs. of hay
32 °F	rain and wind	10-14 Mcal/day*	10-14 lbs./day

Alterations In Feeding

Many adult horses can maintain body condition on a complete forage diet with access to free choice trace mineralized salt. Adult horses should consume between 1.5 and 2 percent of their body weight in hay, or a 1,000-pound horse will eat 15 to 20 pounds of hay per day. Supplementation with grain is only necessary if horses have difficulty in maintaining body condition. Therefore, horses maintained in extremely cold conditions for an

extended period, with minimal shelter, may need grain supplementation to meet their energy demands.

In most cases, an all-forage diet is a more desirable way to meet a horse's elevated energy requirements. Forages contain a much higher fiber content than grains. Fiber is utilized through bacterial fermentation within the cecum and large intestine. Much more heat is produced in bacterial fiber fermentation than in digestion and absorption of nutrients within the small intestine (cereal grains). This results in a greater amount of heat being produced through the utilization of forages than through grain. Thus, a horse's increased energy requirements are better met by providing horses all the forage they will consume without waste.

Although winter conditions will greatly increase some horse's energy requirements, the duration of the cold, windy, wet conditions should be considered before alterations are made in the feeding program. The amount of a ration, or grain, a horse is fed cannot be suddenly adjusted without increased risk of colic and laminitis, or founder. Horses should be preconditioned by gradual increases in the amount of energy fed per day. Increases in hay are much more readily tolerated by horses. If the cold spell only lasts one to two days, alterations in grain may not be needed. However, if the cold spell is over an extended period of time, adjustments may gradually be made.

Preconditioning horses before the onset of cold temperatures helps to reduce the effect of cold weather on nutritional needs. Fat cover acts as an insulator and provides energy reserves during stress. It may be difficult for horses to increase body condition during extremely cold weather. Additionally, during long bouts of freezing temperatures, most horses will experience some loss of body condition, no matter how well they are fed.

Water Requirements

Ample amounts of unfrozen, clean water should be provided for horses during cold weather.

Horses will tend to reduce their water intake as temperatures fall. This reduced water intake, combined with increased forage consumption can lead to a greater incidence of impaction and colic. Water should be maintained between 45 and 65 degrees F, and any ice crystals should be removed. Water should be checked twice daily and provided at all times as horses will drink eight to 12 gallons a day. Forcing a horse to produce moisture by eating snow is counterproductive. Six times as much snow must be eaten to provide an equal amount of water. Furthermore, calories are used to melt the snow that should be used for body warmth.



Hair Coat

A heavy winter hair coat is a horse's first defense from the cold. When allowed to grow, a horse's natural hair coat acts as a tremendous insulator and provides as much warmth as the best blankets. Horses that are to be maintained outside should be allowed to grow a long hair coat, plus the hair within the ears and around the fetlocks should not be clipped throughout the winter months. Cold weather causes the hair to stand up, trapping and retaining body heat. Once the hair coat becomes wet, the hair lies down and loses its insulating ability. A long, fuzzy hair coat can be deceptive regarding a horse's true body condition. The most accurate assessment of body condition is done through feeling the condition over the horse's ribs, plus visual inspection of overall condition.

Shelter Requirements

Although stalling is not necessary for all horses, some protection from the winter elements is desirable. Horses acclimate to winter conditions extremely well but need to be able to escape the bitter winds and moisture. A small, three-sided shed or timberline is sufficient shelter for pastured horses. This will enable them to minimize the effects of strong winds and snow or ice. The net effects are that horses will require less feed, can more easily maintain body weight and are less stressed. These effects make the cost of sheds and windbreaks more attractive by reducing feed bills and reducing stress-related sickness.

If a three-sided shed is used, the open side of the shed should be opposite the prevailing wind. Each mature horse should have at least 80 square feet. The back wall should be 9 feet high, and the opening needs to be 11- to 12-foot tall. A 4- to 6-foot overhang will help prevent rain and snow from blowing into the shed. Sheds should be located so they have adequate drainage. If horses are to be indoors throughout the winter, stalls must be cleaned daily and the bedding kept dry. Good ventilation is crucial. Damp stalls, ammonia buildup and poor ventilation all contribute to respiratory problems. Horse owners will have much less labor, and at times healthier horses if they are turned out during the winter months.

Care should be taken when leaving younger, less experienced horses on winter pasture. Running an older horse as a "baby sitter" can help teach the youngsters how to find shelter, food and water. Additionally, the older horse often has a calming effect on the young herd and reduces the chances of them running through fences and such.

Hoof Care

Hoof care must be kept on schedule throughout the winter. Many horse owners prefer to pull shoes throughout this period of minimal riding. Any horse to be maintained outdoors should have its shoes removed. Shod feet can become ice packed, increasing the chance for slipping on snow and ice. Hooves should be routinely trimmed every six to eight weeks to prevent cracks and breakage. However, care should be taken not to trim them too closely to prevent bruised, sore feet from the frozen ground. Laminitis can occur from trauma to the sole due to walking on rough, frozen ground. Occasionally, if hooves are not maintained throughout the winter and allowed to break off, it may be difficult to have the horse shod when spring comes.

Caring for horses over the winter months can be a difficult task with cold weather, frozen water and strong winds. However, the better horses are maintained during the winter, the better condition they will be in once the weather warms and it is time to start riding again. No matter how difficult the weather, providing feed, water and shelter for horses is critical.

Goshen Historic Seeks Help To Complete New Barn

As Historic Track embarks on their 101st Anniversary of Grand Circuit Racing, they are also poised to complete the construction of a new 19-stall "shed row" barn to replace the 100-year-old structure that was recently razed on a lot adjacent to the BOCES barn.

During 2010, the building site was excavated and a concrete foundation and retaining wall was poured. This process led to an extensive and unforeseen, but necessary drainage remediation project. This in turn led to a budget overrun and construction delays which, however, permanently solved a decades-long flooding problem that will benefit both our present and future tenants.

A membership drive is currently underway to help defray some of these cumbersome building costs. Those who are already members are asked to consider upgrading their membership level or buying a gift membership for a friend via the link below.

This racing season also marks Goshen's 50th year of Matinee Racing, allowing Historic Track to showcase "sport for sport's sake." In addition, the track's status as a





National Historic Landmark continues to attract tourists and visitors from all over the world.

Having been founded in 1838, Goshen Historic Track is the world's oldest continuously operating harness racing facility. Most of the legends of Harness Racing have graced Historic Track with their presence. From Hambletonian and Greyhound to Deweycheatumnhowe, the historical roots of Harness Racing have been decisively planted in our soil.

Goshen Historic Track is an incorporated non-profit, therefore without the revenues of pari-mutuel wagering or VLT's, we rely on the generosity of those in the industry who appreciate the importance of our celebrated venue. The admission revenues we take in from racing just seven days each year cannot begin to offset the stakes racing purse structure and the considerable expense of maintaining a year-round training facility. Although we share the same hallowed ground and a common mission, we are a financially separate entity from the Harness Racing Museum and Hall of Fame.

Historic Track's existence would not be possible without contributions from people throughout the industry. Membership plans start at just \$35.00 per family. All first-time and renewing members will receive a beautiful full-color bumper sticker depicting the start of the Hall of Fame Trot. Visit our website today by clicking on the following link: www.goshenhistorictrack.com/join.html

Goshen Historic Track is located at 44 Park Place in heart of the Cradle of the Trotter, Goshen, New York. Stalls are available at the year-round Standardbred training facility, which will host Matinee racing on the first three Sundays in June (5, 12, & 19). In addition, The World's Oldest Harness Track will celebrate 101 years of Grand Circuit racing July 1 through July 4, in conjunction with Goshen's Great American Weekend. The facility boasts a 2,000 seat grandstand and 20 acre infield which is available for special events, concerts, trade shows, etc.

For further information about Historic Track, or to become a member of the National Historic Landmark, please call General Manager Chris Tully at 845-294-5333 during daily business hours, or Email to: ChrisTully@GoshenHistoricTrack.com

Horse Disposal Options

Source: eXtension.

Horse owners do have some options for disposal of an equine carcass. Options for horse carcasses vary by locality and include burial, composting, rendering and cremation/incineration.

Burial

Regulations on horse burial vary from state to state, and within states, from locality to locality. Many jurisdic-



tions require the burial site be no fewer than 100 yards from wells, streams, and other water sources; and in some locales, it is illegal to bury a chemically euthanized horse. Generally, a trench 7-feet wide and 9-feet deep is sufficient, with at least 3-4 feet of dirt covering the animals remains. In order to accomplish this, one needs access to a backhoe, which can be rented for a fee between \$250-\$500, depending on location.

Landfills

Landfills are an alternative to burial. Keep in mind that not all municipal landfills accept animal carcasses, and those that do, do not necessarily take horses. Additionally, some landfills that accept horse carcasses will not take the remains of a chemically euthanized animal.

Incineration/Cremation

While incineration/cremation of a horse carcass is very expensive, it is one of the most environmentally friendly solutions to body disposal. Cremating a 1,000- pound horse can cost between \$600-\$1000, depending on location and current price of propane. The incinerators are regulated by strict environmental laws at both the state and federal level, thus providing control over air pollution. As the ashes pose no environmental threat, they may be returned to the owner and buried or sent to a landfill.

Rendering

Rendering is an effective, affordable and environmentally safe method of livestock carcass disposal. Carcasses are "cooked" to destroy pathogens and produce end products such as bone meal that can be used in animal feeds. Rendering companies will normally pick up the remains and charge a fee ranging from \$175 to \$300, again depending on location. Only 50 percent of the states have rendering plants, the majority of which are concentrated in the Midwest.

Composting

Composting, a controlled, sanitary decomposition of organic materials by bacteria, has recently gained popularity. It is performed in covered trenches or piles that must be located away from runoff and drinking water supplies to avoid contamination. The combination of vegetative material and moisture results in temperatures reaching at least 130°F which, over the course of time, kills most pathogenic viruses and bacteria. It takes approximately 9-10 months to compost an intact horse carcass; and the end product is a spongy, odorless substance that can be used for soil sup-

plementation. Livestock composting is legal in every state except California, but even in states where the practice is permitted it can be limited by carcass weight. Information on composting and its availability in certain areas may be obtained from the Cornell Waste Management Institute.

Recent EPM News Update

You know opossums can pass equine protozoal *myeloencephalitis* (EPM) to your horse. But there are other animals that act as intermediary hosts and carry *Sarcocystis neurona* – the parasite that causes EPM by invading a horse's spinal cord. Here's more information on the parasite's life cycle – and some tips for reducing your horse's risk.

Opossums are still the critical link in EPM's transmission by passing sporocysts (the stage of the parasite that infects horses) in their feces. Your horse can pick up sporocysts in feces-contaminated feed or water. Researchers had identified additional intermediate hosts, armadillos, striped skunks and raccoons. Also on the suspect list were the brown-headed cowbird and the domestic house cat.

The good news for barn owners is that a new study from the Virginia-Maryland Regional College of Veterinary Medicine, states that barn cats are no more likely to transmit equine protozoal myeloencephalitis than the wildlife associated with transmission. The study recorded low naturally occurring infections among cats because of their minimal contact with opossum feces.

Below is the summary of the study's findings.

Prevalence of Antibodies to *Sarcocystis neurona* in Cats From Virginia and Pennsylvania

Vasha Hsu, David C. Grant, J. P. Dubey, Anne M. Zajac, and David S. Lindsay: Journal of Parasitology: August 2010, Vol. 96, No. 4, pp. 800-801.

Sarcocystis neurona is best known as the causative agent of equine protozoal *myeloencephalitis* of horses in the Americas. Domestic cats were the first animals described as an intermediate host for *S. neurona*. However, *S. neurona*-associated *encephalitis* has also been reported in naturally infected cats in the United States. Thus, cats can be implicated in the life cycle of *S. neurona* as natural intermediate hosts. The present study examined the overall occurrence of the disease within a defined population at one time, as



was measured by the levels of immunoglobulin G antibodies to one of the suspected organisms formed by within the body of the host of *S. neurona* in populations of domestic cats from Virginia and Pennsylvania. Overall, sera or plasma from 441 cats (Virginia = 232, Pennsylvania = 209) were tested by an indirect immunofluorescent assay test. Antibodies to *S. neurona* were found in 32 (7%) of 441 cats. Of these, 22 (9%) of the 232 cats from Virginia and 10 (5%) of the 209 cats from Pennsylvania showed positive results on serological examination for *S. neurona*.

Reducing the Risk of Exposure to EPM

So what can you do to control the spread of the parasite and reduce the risk of your horses getting the disease?

- ◆ Keep feed storage areas as clean as possible: Put grain in tight containers and keep hay storage areas clean. Cover hay with a tarp if you have birds in the rafters, and remove or tightly cover any food or garbage (including food for cats and dogs).
- ◆ Keep opossums away from the area where horses, water and feed storage are located--since opossums will climb, but won't dig, try using wire mesh fencing with a hot wire strung around the outside.
- ◆ If you have opossums, you may be able to trap and relocate them. Use peanut butter, fruit or cookies as a lure. (Don't use meat or cat food, as you may end up trapping a cat instead.) Be sure to check with wildlife or animal control officers for wildlife laws and regulations governing trapping and relocating opossums. Remember they have a territorial boundary ranging from 30 to 96 acres!



Opossum Facts: Habitat and Diet

- ◆ Forest, farmland, grassland, urban and suburban areas, near water
- ◆ undefended territory from 30 to 96 acres
- ◆ Nomadic, staying in one area from six to twelve months
- ◆ Maintain a number of nesting sites
- ◆ Nest in hollows of trees or in burrows of other animals, under brush piles, under houses or decks, in garages, sheds, or attics, as long as it is a dark, cool and



quiet place where the opossum can sleep during the day

- ◆ Construct rough nests of leaves and grass.

Regional Horse Council Updates

Orange County

- ◆ *O.C. Horse Council Business Meeting*
March 1, 2011, 7:30 PM,
Hamptonburg Town Hall Community Room.
- ◆ *Spring Fling*
March 12, 2011, 10:00 AM - 4 PM;
Goshen, Harness Racing Museum. Come and help us end the winter blues and enjoy the company of other horse enthusiasts, Vendors, new and used tack. Fashion show by Whinnies & Knickers; Refreshments by 4-H clubs, Door prizes & 50-50 For further information contact: Debbie Botbyl, at (845) 537-0200 or dbotbyl@hotmail.com
- ◆ *O.C. Horse Council Business Meeting*
April 5, 2011, 7:30 PM,
Hamptonburg Town Hall Community Room.

Ulster County

- ◆ *March - Ulster County Horse Council Quarterly Meeting - Pot Luck Dinner - Membership Drive*
Marbletown Community Center, Stone Ridge New York, www.uchc-ny.org, uchcny@gmail.com
- ◆ *Mid Hudson Driving Associations/Ulster County Horse Council - Arena Driving Trial*
April 17, 2011, 9 AM to 12 NOON -
Loosestrife Farm, 30 Loosestrife Lane, Kerhonkson, NY 12446. Contact Myron Langer - 845-626-7717, www.loosestrifefarm.com, www.uchc-ny.org, uchcny@gmail.com





Cornell University
Cooperative Extension
Orange County

Community Campus
18 Seward Avenue, Suite 300
Middletown, NY 10940-1919

EQUINE LINE



Equine Line is produced by *Hudson Valley Livestock* digest personnel. *Equine Line* is a bi-monthly publication designed to provide the horse owner/enthusiast with timely, relevant information pertaining to the various segments of the equine industry in the upper Hudson Valley and Catskill Mountain areas of upstate New York. Contact your local Cooperative Extension office for subscription information.

This issue was prepared by Mick Bessire, CCE Greene & Columbia Counties, Andy Reith, CCE Orange and Ulster Counties.

Andy Reith
CCE Orange & Ulster Counties
845-344-1234
845-389-3564 (cell phone)
ald5@cornell.edu

Mick Bessire
CCE Greene & Columbia Counties
518-622-9820
rgb8@cornell.edu

Jennifer Fimbel
CCE Dutchess County
845-677-8223
jlf20@cornell.edu