

Penn State Horse Newsletter

DAS 2010-

Content

Pennsylvania Equine Stewardship Program

Your Most Useful Tool in Equine Parasite Control

Spring Pasture Management

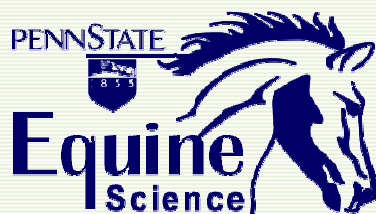
Equine Care Facilities Survey

Nutritional Considerations for the Lactating Broodmares

Breeding TIPS

The Penn State Equine Newsletter publishes articles on the many facets of horse health, management, Penn State events.

[More about the Penn State Horse Newsletter...](#)



We have experts from Universities around the country ready to answer your questions click on <http://www.extension.org/ask>

The “Pennsylvania Equine Stewardship Program” Will Focus on Horses Environmental Impacts

Penn State University’s, Equine Extension Environmental Stewardship Team Members will participate in an educational project, along with County Educators and university faculty.

The project, titled “Pennsylvania Equine Stewardship Program,” will focus on three areas: horse and pasture interaction; nutrient and manure management; and water, soil, and air quality in a horse operation. The Equine Environmental Stewardship Course consists of individual lessons geared to horse owners. It covers the crucial issues of maintaining a healthy pasture for their horse(s) and the environment.

The state- wide project was proposed by Ann Swinker, PhD, Associate Extension Horse Specialist and Donna Foulk, Extension Educator. Cooperative Extension and county educators agents will help disseminate the courses across the state.

The group’s information will be distributed through short courses, fact sheets, or online seminars. The team has been conducting research in the equine area over the past two year, through a grant with the Chesapeake Bay Foundation. The effects of manure and fertilizer runoff on soil and groundwater seem like obvious choices to study, Foulk said, but even nutrition (horse's diets unbalanced) can impact the environment in a large-scale farm or at a sporting event. Previous research suggests the excess nitrogen and phosphorus in feed, which pass through horse manure, can affect water quality.

A series of Environmental Short Courses have been developed for delivery through county extension programs for this year. The 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 short course will include instruction with activities and will be offered at several locations throughout the state.

The curriculum focuses on pasture management for the horse and includes the following topics: Pasture Grazing Basics, Pasture Plants & Pasture Renovation, Soil Fertility Management, Weed Management and Nutrient Management. Contact your local Pennsylvania Extension Office to find a program in your area. See the “Calendar of Events” in this newsletter.

Your Most Useful Tools In Equine Parasite Control

Prepared by Ann Swinker, Extension Specialist

Some of the livestock parasite populations have been increasingly developing a resistance to drugs used in the control of parasitic issues. The issue of anthelmintic resistance has become more publicized and important over the past few years. Without any new anthelmintic drugs on the market, how does this developing resistance impact your horses? Will "super worms" develop as a result of this resistance?

Many available tests are capable of detecting one or more types of internal parasites. Always consult your veterinarian regarding the best test for your current needs and for the interpretation of results. Examples of available tests include: Fecal Flotation, Fecal Centrifugation, Home Fecal Test Kits and ELISA (enzyme-linked immunosorbent assay) blood tests for tapeworms.

One of the more useful tools in a parasite control program is the fecal egg count—microscopic examination of fresh manure for parasite eggs. This simple test allows the veterinarian to determine which parasites are present and whether the infection is light, moderate, or heavy. This information is important in developing a de-worming program for your horse or farm, and in monitoring the effectiveness of the program.

Fecal egg count involves collecting two or three fresh manure balls from the horse to be tested by sending the manure sample to a veterinary laboratory. Results are expressed as eggs per gram (epg) of manure. A fecal egg count of less than 200 epg suggests a light parasite load. Horses with high fecal egg counts of 500-1000 epg suggest the interval between de-worming is too long.

It is important to note that a negative fecal examination does not mean the horse is free of internal parasites. Some types of parasites produce eggs only intermittently. Larvae do not produce eggs at all, and may be present in large numbers in a horse with a fecal egg count of zero. (And-omit and) Tapeworm eggs may be missed with routine fecal egg count techniques. The results are most useful when several horses on a farm are tested on the same day. This information gives the veterinarian and farm manager a good idea of the level of parasitism on the property.

De-wormers - There are several different de-wormers, or anthelmintics, currently available. Most are broad-spectrum, meaning that they are effective against several different types of parasites. It is generally best to use a broad-spectrum de-wormer as the basis of your de-worming program. If a specific problem is identified, such as tapeworms or encysted small strongyles, a more specific de-wormer can be used. No de-worming product is 100 percent effective in ridding every horse of all internal parasites. However, it is not necessary for a product to kill every worm in order to improve the horse's health, minimize the risk of serious disease, improve feed efficiency, and reduce pasture contamination with parasite eggs and larvae.

Consult your veterinarian about the controlling of parasites. Remember, de-worming is no longer a simple do-it-yourself procedure. For more information, contact your veterinarian or the American Association of Equine Practitioners, 4075 Iron Works Parkway, Lexington, KY 40511.

Pasture Management

Donna Foulk, PSU Extension Educator

Proper pasture management leads to high quality, productive pastures that can supply excellent nutrition for horses. Pasture management can be a challenge because of continually changing environmental conditions and fluctuations in horse populations on farms. Adopting good pasture management practices is increasingly important as stocking density or number of horses per acre increases. In most areas, pastures can be maintained with very little management at stocking densities of 2-4 acres per horse. At higher stocking densities, good management is necessary to maintain high quality pastures. Without adequate pasture availability, horse owners need to feed hay to help meet the animal's nutrient requirements and prevent overgrazing of the pasture. The pasture management techniques outlined below can be used to help you maintain healthy, productive pastures for your horses.

Test Your Soil

Proper fertilization is a critical step in maintaining high quality forage in pastures. Soil nutrient and pH levels are extremely variable from farm to farm. It is important to accurately determine the nutrients and pH of the soil for each pasture and field on the farm by performing a soil analysis. Consult your local Extension office or analytical laboratory for soil test kits and directions on how to collect a soil sample. It is important to collect a representative sample so the recommendations you receive from the analysis are applicable to your entire pasture instead of only a small area. After submitting the sample, the lab will provide a complete report which documents soil nutrient levels and pH. The report will also provide recommendations for the application of fertilizer and lime.

Apply Fertilizer and Lime Based on Soil Tests

Maintaining proper soil pH is essential to the production of healthy forages. Soil pH is a measure of the acidity of the soil. A pH of 7 is neutral, a pH greater than 7 is basic, and a pH less than 7 is acidic. Grass forages perform well in soils with a pH between 6 and 7. Legumes require a higher pH or more basic soils. Acidic soils are detrimental to plant health and productivity because acidic conditions limit the availability of many soil nutrients. Acidic soils may also mobilize metals and other materials in the soil that may be harmful to plants. A soil analysis report will provide the soil pH along with recommendations for the application of lime. Lime is basic in nature. Therefore, application of lime increases soil pH and makes the nutrients in the soil available to the plant.

Plants require many nutrients for growth and reproduction. Your laboratory report will tell you the specific nutrients to apply on your farm. The three primary nutrients on your report will be nitrogen (N), phosphorus (P), and potassium (K).

For grasses, nitrogen is a critical nutrient for forage quality and growth. In contrast, legumes such as clovers and alfalfa are able to "fix" nitrogen or take nitrogen from the air and convert it to a form which they can utilize. Therefore, legumes do not have the same requirement or response to nitrogen as grasses. For grasses, adequate nitrogen is associated with a dark green color and vigorous, vegetative growth. A nitrogen deficiency is indicated by a pale green or yellow color and poor growth. Heavily grazed pastures require approximately 100 to 150 pounds of nitrogen per acre per year. Too much nitrogen applied at one time can cause animal health and

water quality problems, so nitrogen application should be divided into multiple applications. A good rule of thumb is to apply 50 pounds per acre at the onset of the spring growing season. An additional 50 pounds of nitrogen per acre should be applied in early fall. Summer applications are appropriate if environmental conditions such as proper temperature and moisture, are allowing the pasture grasses to grow. Summer applications should be restricted to 30 pounds per acre and should match forage growth.

Phosphorous and potassium are also important nutrients. Phosphorus improves forage quality and root development. A well-developed root system increases the plant's ability to acquire nutrients and water from the soil. Adequate potassium improves the plant's ability to survive periods of stress such as drought or freezing winter temperatures. A potassium deficiency is characterized by poor growth, reduced disease resistance, and reduced winter-hardiness.

When purchasing fertilizer, the nutrients in the fertilizer are stated on the label. The percentage of nitrogen, phosphorus, and potassium are expressed as a ratio, by weight. The nitrogen, phosphorus, and potassium ratio is listed in that order. For example, a 10-10-20 fertilizer contains 10% nitrogen, 10% phosphorous, and 20% potassium. One hundred pounds of this fertilizer contains 10 pounds of nitrogen (10% of 100 pounds), 10 pounds of phosphorous (10% of 100 pounds), and 20 pounds of potassium (20% of 100 pounds). Fertilizer is available in many ratios. Commonly available fertilizer ratios include: 10-20-20, 15-15-15, 10-10-10, 5-10-5, 5-10-10, 10-20-10, 10-20-20, 20-10-10, and 46-0-0.

In addition to these three primary nutrients, grasses also require some additional micro and macro nutrients, such as sulfur, iron, and boron. Since many soils have sufficient levels of these nutrients, it is wise to test soil concentrations if you suspect that a deficiency might occur. Most soil laboratories will test and provide recommendations for these nutrients for an additional fee. **Caution: Fertilizers can be toxic to livestock.** Animals should be kept out of the pasture when fertilizer is applied and should not be returned to the pasture until all of the fertilizer has leached into the soil. Application of fertilizer prior to rainfall or irrigation can reduce the time the animals have to be out of the pasture.

Pasture Renovation

Pasture renovation is an effective way to improve stand density or introduce new species into existing pastures. Following a few simple management techniques goes a long way to promote the establishment of new seedings.

When renovating pastures, it is very important to select the correct forage species. Always match the forage species to your site conditions, management level, and the stocking rate of your pastures. Forage species vary greatly in terms of their ability to tolerate poor soil fertility, low pH levels, wet and dry soil conditions, and intense grazing. There are many new forage varieties available that have been developed to match specific pasture conditions. Most pasture seed mixes contain a variety of species. If you purchase high quality seed, it is expected that several of the species in the mix will thrive in a pasture even with variable management or environmental conditions. To ensure quality, it is important to purchase seed from a reputable dealer and purchase seed mixtures formulated for horse pastures. Many turf grasses, including fescue and perennial ryegrass, contain harmful endophytes. An endophyte is a fungus that lives within the plant and produces a chemical that fights insects and diseases. Endophytes can be beneficial to plants because they improve persistence, but specific endophytes may have a

detrimental impact on animal health. Not all endophytes are harmful to animals. Therefore, it is important to purchase endophyte-free seed or seed with an endophyte which is safe for animals to consume.

When you have identified the seed you are going to purchase, select the appropriate time of year to plant. In general, spring and fall are ideal seasons to plant. In regions prone to summer drought and with limited irrigation, early fall seedings are generally more effective.

Proper soil preparation promotes the growth and survival of new seedlings. To ensure adequate pasture fertility and pH, submit a soil sample to the lab and fertilize and lime as recommended. Prior to seeding, control weeds in your existing pasture and mow or graze the existing pasture to reduce competition

Pastures can be renovated by using a no-till drill or a broadcast seeder. Renovating pastures using a no-till drill increases the chances for good germination and establishment. A no-till drill cuts a slit in the ground, drops the seed in the slit, covers the seed, and firms the soil. When using a drill, do not plant the seed too deep; maximum planting depth for grasses is ¼ inch. To locate a no-till drill, contact your local equipment company.

With proper soil preparation and management, broadcasting can also be an effective seeding method. In general, just broadcasting seed onto unprepared soil does not result in enough seed-to-soil contact to allow for high germination rates and good establishment. Therefore, to promote establishment of broadcast seedings, the soil surface must be disturbed prior to planting. To loosen the soil, scratch the surface with a disc or a harrow. Then, broadcast the seed using a spin-seeder or by hand. After broadcasting, roll the pasture to ensure adequate seed-to-soil contact. If irrigation is available, irrigate lightly after seeding to keep the soil surface moist until the grass germinates and each plant has 2 to 3 leaves per seedling. Then, irrigate according to local recommendations for pastures.

To ensure the new seedlings have time to establish, control animal access to the new pasture. Once the new seedlings are firmly rooted, lightly graze or mow multiple times. Grazing or mowing grasses promotes tillering and the development of the root system. Initial grazings should begin when the grass is 6 inches tall and animals should be removed when the grass has been grazed to 3 inches. For the initial grazings, allow short-term access in favorable weather and provide your animals hay to prevent overgrazing.

Once established, proper grazing management by controlling the intensity and timing of grazing improves forage quality and long-term productivity. Grazing height is a simple measure to control the duration of grazing - when to graze and when to remove the horses from a pasture. A good rule of thumb is to allow pasture to reach 6 to 8 inches and then graze to 3 to 4 inches. A rotational grazing system allows you to control the timing of grazing.

Resource

Information on forage species, establishment and management, soil fertility management and weed/insect management can be found in the Penn State Agronomy Guide that is on line

<http://agguide.agronomy.psu.edu/cm/sec8/sec8toc.cfm>

Executive Summary of the Equine Care Facilities Survey

Ericka Caslin, Director, Unwanted Horse Coalition, American Horse Council

The 2010 Unwanted Horse Coalition's Equine Care Facilities Survey, based on approximately 160 respondents, indicated that most facilities in existence are run as very small rescue/adoption centers and can only accommodate a few horses at a time. The majority of these facilities (62.7%) maintain a 501(c)(3) status, but can only take in around 1-15 horses, adopt 0 to 15 horses a year and operate off of a low budget (57.6% under \$50,000). While these facilities manage with less than 15 volunteers, most of the facilities have no paid staff and are run solely off volunteer workers. The facilities operating with a small budget do not have the funds to accommodate additional horses, even if there is room.

Survey takers were extremely interested in getting assistance in numerous areas: grant writing, fundraising, building a board of directors, educational and contacts of experts, financial management and insurance issues

The facilities were not interested in getting assistance in website design or obtaining 501(c)(3) status (because the majority already are non-profit). The facilities were very to extremely interested in creating a budget and getting help with their volunteer base.

Respondents felt that they would benefit from having additional rescue/adoption/rehabilitation/retirement facilities in their area (41.1% thought it to be extremely critical, 31% thought it to be critical). They also felt that their facilities would benefit from having educational materials from the UHC on the subjects of owning responsibly, breeding responsibly, horse care, and horse care for the abused/neglected horse. Survey takers felt that a few programs would be extremely important to their organization: Euthanasia Clinics, Hay banks, Vaccination Clinics and Castration Clinics.

The open ended question regarding what the UHC could do to help facilities in terms of education, outreach, etc. yielded 116 responses. Most of the respondents felt that the UHC should educate more owners about owning responsibly and more breeders about breeding responsibly. They believed that clinics about horse ownership might help raise awareness and teach more people about owning a horse. Many felt raising awareness about the Unwanted Horse Coalition in general was a good idea, because many individuals, organizations and facilities do not know about the UHC and its work.

Certification of Equine Care Facilities was mentioned, as well as a need for assistance with law enforcement and animal control to help save more horses. Some survey takers mentioned a need for a database of resources for rescues. Other responses to this question placed emphasis on the ideas mentioned previously in the survey such as fundraising help for facilities and the need for euthanasia clinics.

Nutritional Considerations for the Lactating Broodmares

Resource for this article is the HorseQuest.com eXtension, Horse section

The lactating broodmare is one of the hardest working class of horses to feed. The wet mare's nutrient requirements are greatly influenced by the amount of milk produced to supply the nutrient needs of the foal. Milk yields range from two to three percent of the mare's body weight per day, so it can be easily seen that nutrient needs are greatly increased.

Body Condition and Energy Needs

Energy requirements for a broodmare will nearly double following foaling. It is usual for a 1,200-pound mare to need 12 to 15 pounds of an average energy density grain mix in addition to 10 to 12 pounds of a good quality hay to meet her energy needs. Careful management is necessary in this class of mares because individual requirements will vary greatly. A nursing foal can quickly lower the condition status of the mare, and wet mares in a thin body condition may take longer to rebreed and have lower pregnancy rates than mares in a moderate to fleshy condition. Also, the mare may be moved to a new location for breeding soon after foaling, which can create a loss in condition due to stress. It is extremely difficult to increase condition in lactating mares because the amount of feed that would be necessary can lead to higher incidence of founder and colic. As such, it is important that the mare is adequately conditioned before foaling.

Protein Needs

Protein requirements are also important during lactation because of the large amounts of protein leaving the mare in the milk. Mares not receiving adequate protein have decreased milk production, resulting in lowered foal growth. Requirements double in heavily lactating mares, and an increased percent protein ration is usually necessary. Most hay-grain combinations dictate that the grain mix is at least 14 percent crude protein. Grain mixes with 10 to 12 percent crude protein should be fed with a hay high in crude protein, so many producers feed a high quality alfalfa with this type of grain mix.

Calcium and Phosphorus Needs

Calcium and phosphorus needs will also double in the lactating mare as compared with her requirements for maintenance. The calcium and phosphorus density of the grain ration will depend on the amount of grain and hay that is fed. The mineral density of most rations should be increased to levels of 0.6 percent calcium and 0.4 percent phosphorus to meet the added requirement. Mineral needs can be met when increasing the amount of grain mix fed for energy needs. If grain and hay sources are marginal in their mineral densities, it is advisable to add a mineral premix to rations for this class of mare. Mineral premixes, like vitamin premixes, should be added only at recommended levels.

Vitamin Needs

Most classes of horses will meet their vitamin needs if they are fed high quality grains and hays. Vitamin requirements increase in lactation to the point that it is a good practice to add a vitamin source to grain mixes. Feed suppliers and feed tags should provide information on whether grain mixes have been fortified with vitamins during the feed manufacturing process. If not, it is

recommended to add a vitamin supplement on-site to the grain mixes for lactating mares. Vitamin premixes should contain about a 9 to 1 ratio of Vitamin A to Vitamin D. For more information contact:

http://www.extension.org/pages/Nutritional_Considerations_for_Broodmare

Breeding TIPS:

- To increase your breeding success, follow these tips:
- Evaluate mare and stallion fertility before the breeding season begins.
- Tease mares every other day to detect estrus/heat.
- Time breeding for 36 hours or less prior to ovulation.
- Keep detailed breeding records for both the mare and the stallion.
- Ensure broodmares are kept in a body condition score of at least 5 (moderate).

Edited by [Extension Horse Specialist Ann Swinker](#), The Horse Newsletter publishes articles on the many facets of horse health, management, Penn State equine events related to the horse industry in Pennsylvania. [More about the Penn State Horse Newsletter...](#)

PSU Equine Events:

Winning Ways Clinic and Tack Sale, University Park, PA March 13-14, 2010

8th Annual Mid-Atlantic Nutrition Conference, Crown Plaza-Baltimore Timonium, Maryland. March 24-25, 2010

Penn State Registered Quarter Horse Sale, Ag Arena, University Park, PA April 24, 2010

Trail Stewardship with the PA Equine Council, State College, PA, July 19-21, 2010

Equine Environmental Short Courses:

May 4th and 18th, West Chester, PA, Contact: Nancy Kadwill at nmk1@psu.edu or 610-489-4315, Donna Foulk at dlf5@psu.edu or 610-746-1970, Cheryl Fairbairn at 610-696-3500

May 17th and 24th, Clinton County Extension Office, Contact: Helene McKernan at hbm10@psu.edu or 570-726-0022

Sept. 18th and 25th, Butler County Extension Office, Contact: Donna Zang at dsz1@psu.edu or 724-287-4761

Oct. 9th and 23rd, Mifflin County Extension Office, Contact: Tom Walker at tew11@psu.edu 717-248-961
