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How Proper Pasture and Grazing Management Can Reduce Your Hay Needs: Part 1: Nutritional Value of Horse Pasture

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Pasture is a valuable nutritional resource for horses. Full realization of pasture's nutritional value can only be achieved when horse owners and managers understand the types and quantities of nutrients supplied by pasture, and apply sound grazing management principles. In this two-part article series, nutritional aspects of horse pasture (Part I) and grazing management strategies (Part II) will be discussed. By appreciating the nutritional value of horse pasture and managing grazing horses properly, horse owners can optimize horse health and decrease feeding costs.

Well managed pasture can supply nearly all required nutrients for some feeding classes of horses (e.g., mature idle horses, broodmares in the first 5 months of gestation). In this article we will review the average energy, protein, mineral, and vitamin content of well-maintained pasture and compare it to the needs of the horse. We will also take a look at how much hay can be replaced with well-maintained pasture, potentially giving you the ability to save a substantial amount of money on feed costs.

Pasture is an excellent source of nutrients that provide calories. Calories derived from pasture plant nutrients are measured in units termed "mega-calories of digestible energy," or simply as "DE". The DE content of pasture ranges from 0.8 to 1.2 Mcal/lb DM (Dairy One, 2013), and includes most of the range of DE requirements for horses, which is between 0.8 to 1.4 Mcals/lb DM (NRC, 2007). The lower values of this range correspond to mature idle horses with maintenance only requirements, while the upper values correspond to a five-month-old weanling. Pasture can also be an excellent source of crude protein. Crude protein values for grass pasture can range from 7.5 to 22.7% (Dairy One, 2013) compared to requirements ranging from 6.3% (mature idle horse) to 13.9% (5-month old weanling). These findings demonstrate clearly that grass pasture can provide some or all of a horse's energy and crude protein requirements, depending upon the horse's physiological status and forage quality. So, for many horses, well-

maintained pasture can meet most of their energy and protein needs without needing hay or grain supplementation.

Pasture is a variable source of minerals. In some cases, pasture can contain adequate amounts of minerals relative to requirements; whereas in others pastures it tends to be deficient. The concentrations of calcium and phosphorous reported for 9,432 pasture samples ranged from 0.27% to 0.82 % and 0% to 0.78%, respectively (Dairy One, 2013). The range of calcium and phosphorous requirements for horses is 0.2% (mature idle) to 0.8% (5-month old weanling), and 0.14% to 0.45%, respectively (NRC, 2007).



Pasture is an excellent source of nutrients. Photo Credit Dr. Paul Siciliano

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How Proper Pasture & Grazing Management Can Reduce Your Hay Needs, continued.

Therefore pasture is not viewed as a consistent source of calcium and phosphorous in many cases, especially for nursing mares and growing horses. Pasture also generally lacks the ability to provide sodium, chloride, copper and zinc. Selenium may or may not be deficient depending upon the region or geographical location. Some areas of the Southeastern US are extremely deficient in selenium.

Pasture can be an excellent source of some required fat soluble vitamins. An unpublished study conducted at North Carolina State University that evaluated seasonal changes in vitamin E and beta-carotene (pro-vitamin A) over a 12-month period reported average pasture vitamin E concentrations of 195 ± 59 IU/kg DM, which is well above the requirement range for horses. The lowest concentrations were reported during the months of December through February while the greatest concentrations occurred from May through August. These results suggest that pasture is an excellent source of vitamin E, even during seasons of the year when concentrations are lowest. Beta-carotene is metabolized by the horse to retinol providing vitamin A equivalents.

The average beta-carotene concentration reported in this study was 34 ± 25 mg/kg DM, which equates to 13,600 IU/kg DM of vitamin A. Horses require between 3,000 to 4,800 IU/kg DM (NRC, 2007). Although the beta-carotene concentration provides vitamin A equivalents well above the requirement; there is no likelihood of vitamin A toxicity due to the way that the horse converts beta-carotene to vitamin A.

The value of pasture can clearly be demonstrated when put into the context of hay replaced as a function of hours of daily pasture access. The graph shows some general pasture/hay equivalencies for horses having a variety of differing body weights and hours of pasture access. Keep in mind that these values are average estimates with some degree of variation.

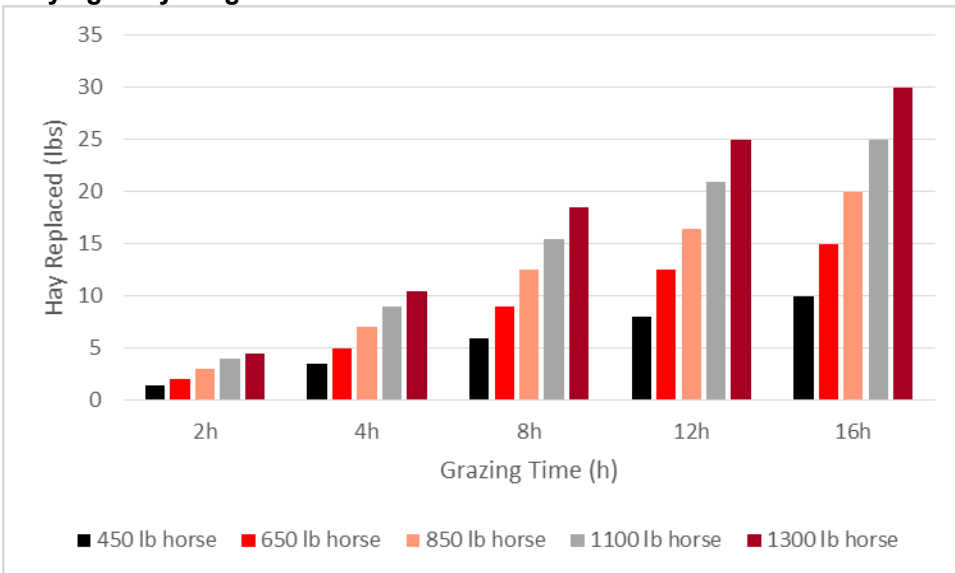
Nonetheless, by comparing values in the table, we can appreciate the value of pasture in terms of hay replacement. When considering current hay prices near \$250/ton (\$0.125/lb) the table shows that horses having pasture access from 2 to 16 hours per day can save owners approximately \$0.50 to \$3.00 per day per horse! That is a possible savings of \$15.00-\$90.00 per month per horse, which is significant when multiplied across several horses.

In summary, pasture can provide some or all of a horse's energy, protein, vitamin A and E requirements. Pasture's ability to provide minerals is variable. Nonetheless, it is clear to see from the above examples that pasture is an excellent source of many important nutrients for horses. In part II of this article, grazing management strategies aimed at fully realizing pasture's nutritional value will be discussed.

References

Dairy One. 2013. Dairy One Feed Composition Library. <http://www.dairyone.com/Forage/default.asp> Online.
NRC. 2007. Nutrient Requirements of Horses. Sixth ed. National Academy Press, Washington, D.C.

Amount of hay replaced (lbs) by grazing (hours) for mature-idle horses of varying body weight ^a



^a *Estimates assume well managed pasture approximately 6 to 8 inches high at the start of grazing and no less than 3 to 4 inches high at the completion of grazing. Pasture should contain less than 10% bare-spots and weeds.*

Tips and Tools for Analyzing your Horse's Feeding Program

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When designing or evaluating a feeding program for your horse (or horse herd), there are many options available and just as many different industry opinions which can lead to confusion on how to properly meet the horse's dietary requirements. People often wonder if they are meeting their horse's requirements but aren't sure where to turn for information. One of the easiest sources of information is the feed tag on your bag of feed. When feeding a commercial grain to maintain body weight, it is important to be able to read and understand the feed tag. First, it is important to choose horse feeds that are formulated specifically for the class of horse you are feeding (e.g., growing horse, lactating mare, performance horse, etc.) since different classes of horses may have very different requirements not just for energy but also for protein, vitamins, and minerals. Additionally, it is important to feed the product within the range that the company recommends based on the body weight of your horse. For example, if the feeding directions recommend that you feed your horse .25-1 lb of feed/100 lbs of body weight this would equate to a proper range of 2.5-10 lbs of feed for a 1000 lb horse. If you are feeding more or less than this quantity to maintain an ideal body weight, a different product might be more appropriate for your horse. Feeding less of a product than what is recommended may mean that your horse is not getting the nutrients the feed is designed to provide (i.e., they are in too low a concentration in that feed to be fed in such a small quantity—the feed is designed to be fed in larger amounts). Certain feeds, like ration balancers, are designed to be fed in smaller quantities (around .5-1 lb/day) and are a concentrated protein, vitamin, and mineral source; these work well for easy keepers who don't need a lot of calories to maintain their weight. Feeding horses above the recommended level may make your horse more prone to gastrointestinal disturbances such as colic and ulcers. It is recommended to not feed more than 0.5% of body weight in one feeding of a traditional grain feed (this does not apply to complete feeds where forage is a significant component of the feed). For a 1000 lb horse this would be no more than 5 lbs in one feeding; if 10 lbs were needed to maintain the horse's body weight, this should be divided into at least 2 feedings. But how does one determine if their horse needs supplemental grain at all? Some horses maintain their weight on forage alone. In general, if horses look good and are at an adequate body condition score then their requirements are probably being met. However, for added peace of mind, there are some online tools and calculations that can be used to examine your horse's feeding program.

For those who want to examine their feeding program more closely, the most in depth listing of requirements can be found in the National Research Council (NRC) recommendations for horses ([Nutrient Requirements for Horses 6th Edition](http://nrc88.nas.edu/nrh/) 2007). Approximate requirements of a horse's nutritional needs based on age, work load, and status are listed, as well as the nutritional values of different grains and hays. This is a resource based on scientific research and updated periodically to be current with recent findings. To access this database of information on-line, use the following website: <http://nrc88.nas.edu/nrh/>. This website allows you to select the age, weight, status, and workload of a particular horse (under "Animal Specifications") and determine its specific nutritional needs for macronutrients (given in the table at the bottom of the webpage) as well as vitamin and mineral needs (under "Other Nutrients"). This program also allows you to select certain forages and feed ingredients (under "Dietary Supply", click on "NEW" to select a feedstuff and select from the dropdown menu either "Forages", "Concentrates", "High Fat Feeds", or "Vitamins/Minerals"). You can now use the program to determine how much of your horse's requirements are being met by a particular feed, forage, or combination of feeds (you must input the weight of each feedstuff being consumed; be aware that the program works in kilograms; 1 kg = 2.2 lbs). Calculations can be made by hand or by entering information into the program.

THE NATIONAL ACADEMIES
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2007 Nutrient Requirements of Horses

Title Page	Animal Specification	Dietary Supply	Other Nutrients	Program Info	Program Operation
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Animal Specification

400 Mature Weight, kg 400 Estimated Actual Weight, kg
2.00 % Intake Level, % BW

Adult at Maintenance Average
 Stallion
 Growing
 Pregnant
 Lactating
 Working/Training

Online programs are available to assist you in calculating your horse's nutritional needs.

Tips and Tools for Analyzing your Horse's Feeding Program, continued.

Sample Calculation

As a brief example of how to use the program for analysis, let's assume we have a mature horse that weighs 400 kg (880 lbs). In order to maintain his weight if he is not exercising (maintenance), he will require approximately 13.32 Mcal of energy, 504 g of protein, 22 g of lysine, 16 g of calcium, 11 g of phosphorus, etc. (according to recent NRC guidelines found in the table at the bottom of the above mentioned web link). If your horse was eating a hay diet, at this point you would weigh out the hay you feed in order to know how much he is eating per day. You would then go

to the "Dietary Supply" tab, click on the "NEW" tab and select the forage your horse was eating (let's pick coastal bermudagrass). You would directly input the amount you weighed your hay to be into the column that says "Amt kg". If your horse is out on pasture or eating free choice hay, this amount must be estimated. Most horses will consume about 1.5-2.5% of their body weight (on a dry matter basis) per day if allowed. In order to consume this, the horse needs either free choice access to hay (for example, a round bale) or to be housed on about 1.5-2 acres/horse of improved pasture. If we estimate that the horse is eating 2% of its body weight in coastal bermudagrass hay, it is eating approximately 8 kg of hay each day (400 X 0.02). On average, coastal bermudagrass hay provides 1.87 Mcal/kg of dry matter and has a crude protein percent of approximately 10.4% (information provided in the NRC program). It is also 87.5% dry matter. If we weighed out the amount of hay our horse eats each day, we could just put that amount directly into the program in the "Amt kg" column. If we are estimating the amount our horse is eating to be 2% BW, we must remember that the 2% estimate is on a dry matter basis (this gives us a way to compare different types of forage—for example, grass has a much higher water content than hay so they must eat a larger quantity of grass to get the same amount of dry matter; we assume horses will eat about 2% of their body weight in dry matter). So if we use the consumption estimate of 2% BW on a dry matter basis, we need to change the "DM %" from 87.5% to 100% (since in this case they are eating 8 kg of 100% dry matter). If we do this, we can then scroll down to the table at the bottom of the page and see that the horse is exceeding all of the macronutrient requirements shown. If we go back into the program and change the animal to a lightly working horse, we will see that it now becomes deficient in energy, and a supplemental grain source would need to be fed with this forage program.

This process of calculating whether a feeding system meets a horse's nutrient requirements can be done on all the macronutrients given in the program, and can be done to a much greater depth than shown in this example. It is important to note that the program does not give you an estimate for the micronutrients provided by a certain feedstuff, only the requirements that your horse has for these nutrients (provided under the "Other nutrients" tab). A well balanced loose mineral mixture is recommended if horses are not being fed a commercially formulated grain or ration balancer.

References

Nutrient Requirements for Horses 6th Edition 2007.

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2007 Nutrient Requirements of Horses

Title Page	Animal Specification	Dietary Supply	Other Nutrients	Program Info	Program Operation
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Dietary Supply											
Feed Name		Amt kg	DM %	DE Mcal/kg	CP %	Lys %	Ca %	P %	Na %	Cl %	K %
Bermudagrass hay - C	NEW	0.00	87.1	1.87	10.4	0.36	0.49	0.27	0.17	0.67	1.8
Orchardgrass	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Alfalfa Hay	NEW	0.00	90.9	2.17	17	0.87	1.19	0.24	0.1	0.65	2
Feed3	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed4	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed5	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed6	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed7	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Bermudagrass hay - C	NEW	8	100	1.87	10.4	0.36	0.49	0.27	0.17	0.67	1.8
Orchardgrass	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Alfalfa Hay	NEW	0.00	90.9	2.17	17	0.87	1.19	0.24	0.1	0.65	2
Feed3	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed4	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed5	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed6	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1
Feed7	NEW	0.00	89.1	2.17	12.8	0.25	0.38	0.25	0.02	0.66	1.1

	Amt kg	DE Mcal	CP g	Lys g	Ca g	P g	Na g	Cl g	K g
Animal Requirements		13.32	504	22	16	11	8.0	32.0	20.0
Dietary Supply	8.00	14.96	832	29	39	22	13.6	53.6	144.0
Balance	0.00	1.64	328	7	23	11	5.6	21.6	124.0

Sample calculation shows macronutrient requirements are exceeded.

Paradigm Shift in Equine Parasite Control

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Staying on top of gastrointestinal parasites is paramount to equine health and performance. Sudden weight loss, diarrhea, unthriftiness and colic are some of the clinical signs resulting from parasitic disease. According to the [AAEP Parasite Control Guidelines](#), rotational deworming programs are based largely on knowledge and concepts that are more than 40 years old, during times when *Strongylus vulgaris* (large strongyle bloodworm) was the main threat to equine health. Nowadays, cyathostomins (small strongyles) and tapeworms have taken over, and disease from *Strongylus vulgaris* is relatively rare. Decades of frequent anthelmintic use have selected for high levels of anthelmintic drug resistance in cyathostomin and *Parascaris* spp (ascarids) populations. Age is an important factor when thinking about the right drug. Adult horses are suffering predominantly from small strongyles, which show widespread resistance against benzimidazole anthelmintics (e.g., fenbendazole), and young horses are more susceptible to ascarids, which show widespread resistance against macrolide lactone anthelmintics (e.g., ivermectin).

Frequent anthelmintic treatments are not needed to keep adult horses healthy.

For more than three decades now, no new classes of equine anthelmintics have been brought on the market, and increasing resistance may render some of these products useless in the near future. Nonetheless, traditional management and product websites maintain and promote the concept of rotational deworming every two months, e.g., by offering “One-Year Paste Horse Wormer Packs”, which include six tubes of anthelmintics to be given every two months throughout the year. This seems to provide an easy solution.

Diagnostic parasite surveillance should always be done first rather than giving anthelmintics prophylactically.

It is recommended to develop a herd-specific deworming plan with the help of an equine specialist that includes management strategies as well as effective anthelmintic treatments that consider:

- the age of horses and parasite species to be targeted
- the stages of the parasites that are most likely present
- the drugs or drug classes that provide adequate efficacy against the targeted species
- the high and low contaminators in the herd: 15-30% of animals shed about 80% of the eggs

In contrast however, veterinarians and equine scientists have promoted targeted deworming strategies for years. Since anthelmintics can be bought over the counter and ordered through websites in the US, it is of greatest importance to establish evidence-based sustainable parasite control strategies to reduce the rate of evolving resistance. In some countries, such as Denmark, Sweden, the Netherlands, Finland, and Canada (Québec), anthelmintics are administered on a prescription basis only. In Denmark, where this strategy was implemented in 1999, a dramatic change has taken place: Veterinarians are more involved in parasite control programs, parasite surveillance is the norm, and the

result has been a more-than-50-percent decrease in the frequency of anthelmintic treatments, with no concomitant increase in the diagnosis of parasitic disease in Danish horses ([Kaplan 2013](#)).

Prior to 2014, the equine herd at the Texas A&M-Commerce Equine Center had been treated prophylactically about every two months with varying classes of anthelmintics. To date, our research has shown that there is now complete strongyle resistance to fenbendazole (Panacur) in the adult horse population, and an early indication of resistance to ivermectin. In the young horse population, *Parascaris* spp are resistant to ivermectin. These findings are in line with levels of resistance documented in major nematode parasites to the three anthelmintic classes in managed horse herds ([AAEP Parasite Control Guidelines](#)). After the realization that many treatments were in fact ineffective and therefore unnecessary, a targeted anthelmintic regimen together with appropriate management techniques is being implemented according to the AAEP guidelines, in order to decrease the cost for anthelmintics, and reduce the development of anthelmintic resistance at the Texas A&M University-Commerce Equine Center.

References

AAEP Parasite Control Guidelines: <http://www.aaep.org/custdocs/AAEP%20Parasite%20Control%20Guidelines.pdf>
Kaplan, Ray (2013): Prescription-Only Anthelmintic Drugs: The Time Is Now. Bioscience, Vol 63 No. 11

Using Electric Fence to Improve Pastures

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Acceptance of electric fence for use with horses varies greatly with horse owners across breeds, disciplines and geographic locations. But regardless of where you are located or what you do with your horses, electric fence can be a valuable tool to improving your pasture management.

Benefits to Pastures

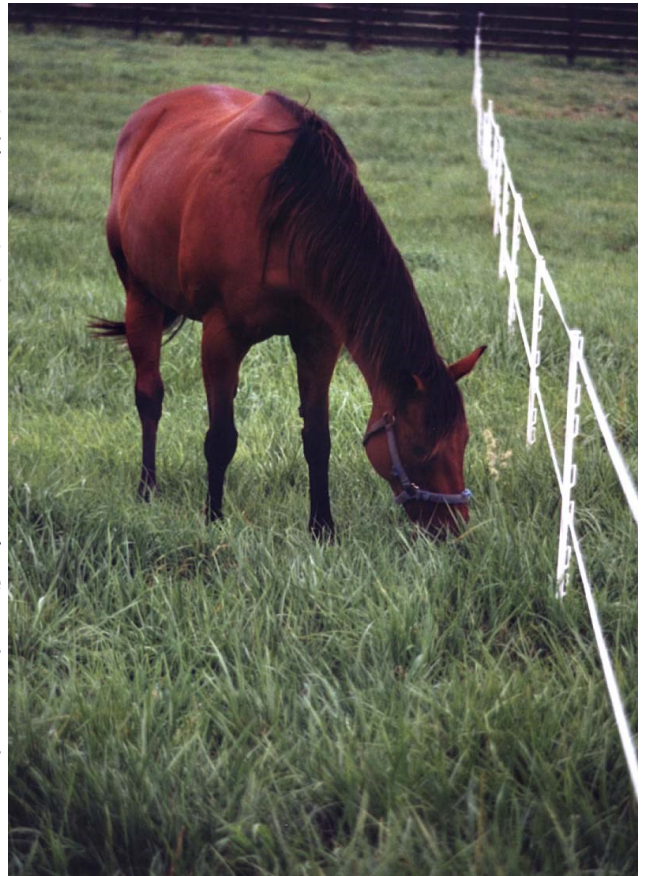
Horses are known as spot-grazers. They will return again and again to the same areas to graze and will leave other areas of pasture untouched. Grasses are more succulent in a short, leafy stage compared to more mature, taller grasses nearby. Horse may also prefer one area of a pasture because it is closer to the gate, water, shade or horses in a neighboring pasture. Areas of heavy grazing will over time begin to deteriorate; large patches of weeds or bare soil will soon be found where health grasses were once plentiful. Weeds can greatly reduce the productivity and the quality of the pasture; bare soil is likely to wash out during wet periods and may take with it nutrients or pesticides that will end up in surface and ground water. Often, spot grazing can be controlled by strategic placement of temporary electric fence.

Installation of electric fence in large pastures allows the manager to subdivide the pasture in a low cost, temporary way. Subdividing allows for rotational grazing. While rotational grazing is often very complicated, it can be as simple as rotating horses from one side of the fence and back to the other. Horses should be allowed to graze one section of the pasture until the average pasture height is about 3-4 inches and then be rotated to another section. The recently grazed pastures should be clipped to a height 3 inches, evening out patched of under grazed areas with more heavily grazed areas. Horses should be returned to this section with they have grazed down other areas to 3 inches or regrowth has reached 6-7 inches. Timing of this rotation is dependent on grass species present, size of pasture, number of horses and weather conditions, but will often be around 21 days on cool season pastures in the spring and 28-35 days during the summer months.

Dividing pastures into front and back (instead of side by side) can give managers the option to encourage horses to graze different sections of a pasture that they may not otherwise want to graze. Always check these areas to be used for toxic weeds or other situations that cause horses to avoid these areas before installing temporary electric fence. Temporary electric fence can also be used to keep horses out of certain areas of a pasture. If managers want to apply herbicides to part of a pasture, this area can be fenced off and allow horses in the non-treated areas only. Fencing can also keep horses away from wet areas, noxious weeds or trees.

What Do You Need

Keep in mind that temporary electric fence is first a psychological barrier, then a physical one. It is not recommended to use temporary electric fence as a perimeter fence for a pasture, but as an interior fence to further subdivide the pasture. It is best to purchase all hardware from the same manufacturer as individual parts of the fence will work better together.



Electric fencing should only be used as a temporary option. Photo Credit by Bob Coleman.

What type of fence material can be used ranges from poly-wire, poly-tape and braided rope. Horse owners need to select a fence type that they are comfortable with and is easy to use and maintain. The wider 1 ¼ inch tape is more visible, but tends to catch wind and water resulting in stretching of the fence. The ¾ inch tape works well, is visible

Using Electric Fence to Improve Pastures, continued.



Many charger options are available: including those that need to be plugged into an electrical source, battery powered, or solar powered. Photo credit by Bob Coleman.

and easy to use as are the braided rope products. If you experience a lot of wind in your area, consider the rope rather than the tape products. How many strands of tape or ropes will depend on the horses in the pasture and horse owners' preference. One strand can be effective, but in some cases two strands are needed to keep horses where you want them.

Select posts that are designed to be used with the type of fence that you have selected. Post can be made of fiberglass, metal or plastic. Metal (such as t-posts) are not recommended with horses. Plastic posts are light weight and inexpensive, however they may not last more than 1 season unless they are UV stabilized (meaning the sun will not break-down the plastic). UV stabilized posts are often more expensive, but are worth the investment. Fiberglass or some of the composite posts last longer and can be driven in, giving a very stable fence. Wear gloves when handling fiberglass posts.

The charger is the source of the electric current for the fence. Chargers can plug into a power source such as in the barn or can be battery or solar operated. Solar chargers may run low after days of cloudy skies or if the solar panel is not exposed to the sun. Many chargers will have a combination of power options for backup when needed. The size and type of charger will largely depend on the length and type of fence you plan to install and the availability of power to the area.

In order for electric fence to work properly, it must be a completed circuit, which will require ground rods. Use galvanized ground rods to reduce rust and corrosion. Ground rods are connected to the charger via wire and are buried in the ground. The number and length of the ground rods needed will again depend on the length, type and strength of the fence, however a general rule of thumb is 3 six foot rods for dividing a medium size pasture. Ground rods do not have to be driven straight into the ground, but can be put in at an angle or even trenched and laid parallel to the soil surface. If trenching, make sure the rod will not be exposed by minor erosion as this will decrease the effectiveness of the fence.

Lightning protection is recommended for electric fence systems, especially more permanent ones. Lightning boxes provide a way for the system to discharge excess energy in the event of a lightning strike. Otherwise, this energy will move back to the charger and can result in charger damage or fire when housed in a structure.

Other items needed will include wire to connect the charger to the fence and to the ground rods. Be sure that the wire is the same time as what is in the fence tape to prevent compatibility issues. Gate handles make it easy to install a simple gate to allow people, animals and equipment in and out of the area. Make sure that the gate is wide enough to allow animals to pass through without getting uncomfortably close to the fence as they may panic and rush through. Electric fence indicators are available that warn others that the fence is electrified and some will flash when the fence is on to indicate an active current. Fence testers may also be useful to test the current in the fence after it is set up.

Using Electric Fence Safely

Proper installation and maintenance is essential for temporary electric fence to be effective and safe around horses. While 1 strand of tape is adequate for most adult horses, multiple strands may be needed for young, aggressive or naïve horses. It is important to electrify all strands, so consider your design and needs before you select a charger. Fences should be kept tight to reduce blowing in the wind and prevent entanglement. When horses are first introduced to electric fence, be sure to provide ample room. Once horses have a respect for the fence, the area can often be reduced or the stocking rate can be increased. Accidents often occur when fences are not "hot enough" or do not carry enough of a charge to completely deter horses from testing a fence. This is why using an appropriate charger for the length and type of fence is essential.

Using Electric Fence to Improve Pastures, continued.

While the shock from an electric fence is quick and harmless, it should be strong enough that there is no question in the horse's mind.

Fences should be checked regularly for sagging, damage or decreased charge. Weeds or grasses that grow up and touch the fence will decrease the charge in the fence, therefore mowing or weed eating will be required around fences that are standing for the season. As horses become accustomed to the fence and appear to give it a wide berth, remember to keep the fence on and working at all times.

Summary

The key to successful use of electric fence is proper installation and maintenance. When used properly, temporary electric fence is a safe and economical way for managers to encourage horses to utilize more of the pastures available. This will reduce the need for stored forages such as hay, increase the profitability of the farm and reduce the environmental impacts of the operation on the surrounding areas.

This article was first published in the Bluegrass Equine Digest, the University of Kentucky Ag Equine Programs' free, monthly equine research newsletter, published in conjunction with The Horse.com and sponsored by Zoetis.

Alabama Equine Economic Impact Study

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The last thorough equine economic impact survey was undertaken in 2006, leaving the state's equine industry with 10 years of changes, growth, and contraction that were neither measured nor analyzed. In response to these needs, a team of equine experts, agricultural economists and rural sociologists from Auburn University and the Alabama Horse Council, has succeeded in securing funding for a large-scale, comprehensive equine survey upon which future industry plans can be built. The results will provide a benchmark for policy makers, community planners and veterinarians because of its scope. With knowledge of how many horses are actually in each of the 67 counties, the Alabama Cooperative Extension Service can plan targeted activities that more closely track real horse populations by breed and use.

According to the 2006 study, Alabama's horse industry plays a pivotal role in maintaining the state's rural infrastructure and bolstering Alabama's economy to the tune of \$2.39 billion annually. At the time, Alabama had 187,000 horses in the state, which was an increase of 44 percent since 1997. Approximately one in every 20 households in the state owns or leases at least one horse and 9.9 percent of the state's horses are used for light to moderate showing, competition, or as breeding stock. The other one-tenth are classified as "high-value" animals, and used for regional or national shows and/or competitions. Owners of these animals spend an average of \$69,080 annually per horse. Major horse shows have a direct impact of \$9.8 million on Alabama's economy, and the indirect impact weighs in around \$18.7 million.

The updated Alabama Equine Impact Study will include Alabama's equine inventory and describe equine services, events, and other enterprises associated with the industry. Input/output modeling will be used with IMPLAN to estimate the economic impacts of the equine industry on the Alabama economy. In addition, thousands of visitors at Alabama equine events are being surveyed to help gauge specific equine interests and economic impact. The project will create budgets for different types of horse ownership from "backyard" horses to high-end show animals. This information will then be used to provide an estimate of the total economic impact of horses in the state, both direct and indirect.



Information gathered in this study will provide an estimate of the overall impact the equine industry has in Alabama. Photo Credit by Taylor Fabus.

Recognizing Responsible Horse Related Welfare

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The equine industry involves a very diverse group of people from various backgrounds and levels of equine related experiences. With many people owning horses, primarily for recreational and showing purposes (projected at around 72% nationally; ~112,000 horses in MS; American Horse Council) education in basic management and handling is vital to the overall welfare of horses. It is imperative that horse owners educate themselves on equine management to provide optimal health to their horses and additionally to protect themselves from potential cause for concern by the general public if horses seem to be neglected. The high percentage of recreationally used horses combined with many horse owners coming from a non-rural background presents many problems in daily equine care and management practices. All horse owning individuals should be educated on the basic needs of horses in order to provide for the animal in an appropriate manner and social standard.

Horse ownership brings about a unique set of responsibilities and liabilities. The primary needs of all animals are food, water, and shelter. However, responsible horse owners are aware of other needs such as: hoof and dental care, exercise, health care, and facilities management due to confinement. Causes of neglect, and thus concerns over proper welfare, stem from a lack of knowledge on common industry practices, environmental issues, and apathy. Horse ownership is a 365 day a year commitment where the owner should expect to spend the majority of time caring for the horse versus riding and other fun activities. In addition to management considerations, owners who ride and train their horses for competition should be aware of practices they use to modify the behavior of the animal.

Today, more than ever, people are watching horse events. These events include anything from rodeo, horse shows, barrel and chuck wagon races, and horse racing. As such, horse owners should ask themselves, "Are my methods training or abusing the horse?" What some may consider "training" may very well be taken as "abusive." (i.e. misuse of spurs, draw reins, crops, some bits, or pulling and yanking, etc.). In today's technological age, all livestock producers should be aware of how handling practices might be perceived by the public. Horse and all other livestock owners should be aware of both the basic responsibilities of horse ownership and welfare considerations.

Basic responsibilities of horse ownership are **food, water, and shelter**. Additional considerations for care are to:

- Provide adequate space for comfort and socialization.
- Keep pens, paddocks, and stalls clean and free of manure, extreme dust/dirt build up, and hazardous objects.
- Avoid slippery surfaces which create a safety concern for horses and handlers.
- Blanketing horses during inclement weather is not a must if the horse has been acclimated slowly throughout the fall and winter months. What should be avoided is blanketing horses who are turned out in rainy and wet environments with blankets not intended to become wet. Blankets that become wet can reduce the body temperature of the horse even more potentially leading to prolonged discomfort

Welfare considerations for horse ownership:

- Misuse of spurs, bits, and other training devices may be seen as inhumane or abusive.
- Proper body condition (BCS 5, (moderate fat cover) or greater is recommended. (*See article reference to body condition scoring). Horses below BCS 5 may be in poor health due to limited fat cover and will be viewed as unthrifty (**it must be noted that older horses may have issues maintaining or increasing in weight due to problems associated with older age such as poor teeth and thus digestibility**).
- Timely deworming and vaccination schedules are necessary for optimum horse health.



Appropriate training methods and proper use of equipment are important aspects of horse ownership. Photo Credit by LSU AgCenter.

Recognizing Responsible Horse Related Welfare, continued.

Horse owners and the public alike should be aware that basic training is a necessity to insuring a safe and enjoyable environment with horses. Horses should never be allowed to bite, kick, or endanger the safety of the handler. In order to establish a healthy respect from the horse, basic training (providing a stimulus, understanding the response from the horse, and reinforcing the behavior) must be understood and implemented. At times, basic training may require the use of training aids but these aids must be used as tools and not weapons. Those not involved with horses should understand that basic equipment such as halters, lead ropes, and saddles do not generally cause harm to the animal. Many people may think that a horse standing tied to a trailer or arena fence may be “cruel” treatment, when in reality it is a simple necessity to managing horses and causes no harm. The vast majority of livestock owners care and provide for their animals with meticulous attention to detail, requiring the owner to feed, groom, clean stalls, exercise, and manage animals on a daily basis.



Body Condition Score 5

Horses maintained with this amount of fat cover are considered moderate. Photo Credit by Clay Cavinder.

One last consideration to variations in management practices are horses who are primarily housed on pasture. These horses may or may not have shelters in the way of sheds or barn access but can do well as long as adequate forage is available. If pastures are not cared for (manure harrowed, weeds managed, clean water accessible, windbreaks/shade accessible, etc.) then horses can become unthrifty very quickly. Additionally, fences and gates must be in good shape to reduce chance of injury and escape.



These horses have access to well-managed pasture with adequate forage and trees for shade. Photo Credit by Ed Jennings UF/IFAS.

All in all, whether you ride and train horses or own them for sheer enjoyment, we must all remember that now more than ever we are being watched to see how we treat and care for our horses. And this isn't a bad thing! As with everything, the bad actions of a few can be viewed as the actions of all. Understanding and being aware of the responsibilities and liabilities of horse ownership will maximize the enjoyment of owning horses while at the same time maintain a positive light on the horse industry.

Reference

*Cavinder, C. A. (2016). Body condition scoring system benefits for horses and owners. Mississippi State Extension Service Publication. www.msucares.edu.

