THOMPSON
VETERINARY CLINIC

BASIC EQUINE HUSBANDRY

This information is prepared in conjunction with the MSU Extension Service for their program entitled "U.P. Small Farm Conference" March 1, 2003. Most of the information was taken from MSU Extension publications and copies of these are available if more in-depth information is desired. This program will cover the basics of keeping horses including keeping your horse healthy and fit, nutritional management of pleasure horses, housing considerations, pasture management, exercise considerations and health care. Questions are not only welcomed but encouraged!! **Gail L. Hoholik, DVM**

I. **Horse Housing requirements**:

A. Horses in the most beautiful, most expensive barns are not necessarily horses with the highest level of contentment. This should not be surprising. Horses evolved to be creatures of the plains; to run from danger, to graze over half of every day on low-quality forage, and to lie down a mere 5% of each day. Horses are highly social creatures which in their natural environments are never by themselves.

B. Housing in barns, although convenient for the owner and conducive to our attempts to make them look magnificent and perform at high levels of competition, creates a very high stress environment. Some barns provide solid wall box stalls with little opportunity for visual contact with other horses and no opportunity for at-liberty exercise or grazing. Research findings in England report a significant correlation between low forage feeding, high concentrate feeding, and limited social contact, with horses that weaved or cribbed. Weaving was greatly increased in horses housed alone compared to horses housed in groups and was greatly diminished by the addition of large windows to box stalls. Weanlings housed in stalls were much more likely to lie down than foals housed together in paddocks and were more likely to engage in abnormal behaviors such as licking stall walls, pawing or kicking stall walls. Two-year old's were easier to train when housed on pasture with other horses than when kept in stalls.

C. Consider the horses nature when you are setting up a new facility or considering a training center. Try to design side and front stall walls with upper grill panels to

allow for social contact. Make pastures and turnout areas a priority. If you show your horses it is possible to have them look good and still follow their natural behavior patterns using housing in stalls which allow visual contact for 12 hours per day and pasture for 12 hours per day. During cold weather, the horses are in at night to keep coats shorter or blanketed, during hot weather they are in during the day to prevent sun bleaching.

D. Close monitoring of body condition will be required as well as consistent working exercise to keep pastured horses from looking like they have a "grass gut". Pastures must also be designed to prevent submissive animals from becoming trapped in corners and receiving bite or kick marks. Avoid re-mixing horses during the show season to avoid kick and bite marks and use fly masks and insect repellents to protect their skin and coats.

E. Horses kept strictly for pleasure are more easily housed according to their nature. Those who compete with their horses should keep in mind to do so responsibly so that the horse is still allowed time each day to behave like a horse.

II. **Basic Horse Nutrition**:

A. More myths are associated with feeding horses than with feeding most other animals. This is in part due to the lack of current nutritional research information as well as an increasing number of horse owners who are unfamiliar with the basics of horse nutrition. Nutritional needs will vary considerable among horses depending on individual age, weight, and level of activity. There are no magic supplements, high performance feed "secrets", or short cuts that will transform any horse into a champion.

B. The most important nutrient—**WATER**! Horses will drink about 10 gallons of water a day and a clean ample supply is critical. Horses in stalls should have not one, but TWO, buckets of water available always, in case one becomes overturned or soiled.

C. Mature horses will generally consume 2 to 2.5% of their body weight in feed each day. For example, a 1,000-pound horse should consume approximately 20-25 pounds (90 percent dry matter) of feed per day. Mature horses performing minimal or no work can be maintained on high quality forages without supplementing their diet with grain. Forages should supply one half or more of the total weight of the

feed consumed daily. Forages are provided in two ways to most horses, either as pasture or as hay.

D. **Horse pasture**: General guidelines for the pasture needs for horses which have a mature weight of 1000 to 1200 pounds are: Mare and foal 1.75 to 2 acres

Yearlings 1.5-2 acres

Weanlings 0.5 to 1 acre

(1) When acreage is very limited (less than one acre per horse), exercise may be the main use of the pasture. Pasture for this purpose will not supply more than a minimum amount of feed. Rotational grazing systems are the most effective method to maximize forage production and consumption.

(2) The most challenging part of pasture supplied feed is that most of the pasture growth is in May and June. Less sunlight and dry weather often slow plant growth later in the grazing season. Soil testing and appropriate fertilization can optimize pasture yield. Pastures should be clipped to a height of 2-3 inches around the end of June or beginning of July since most pastures outgrow spring feed requirements and horses tend to be spot grazers. Clipping also helps to control weeds, prevent grasses from heading and in general keeps the pasture in a more desirable condition.

(3) Pastures should be dragged with a chain link harrow at least once per year, to spread manure droppings which reduces the parasite populations by exposing them to air and sunlight. A good time to drag pastures to spread out the manure piles is when you clip in June or July and again late in the grazing season.

(4) Avoid over or under grazing. Since horses are notorious spot grazers, they will seriously damage desired species in some areas unless they are moved into new pastures frequently. Therefore, some form of rotational grazing is desirable. The correct acreage per horse changes with the season as well as with other factors. However, a good rule is to provide at least one acre of good quality pasture per horse, divided into 5 or 6 paddocks.

(5) Pasture fencing: The most important aspects for horse fencing are safe fences that are strong enough to contain the horses and have an acceptable price and appearance for the owner. Fences keep animals from

encroaching upon the property of others; and at the same time, fences discourage people from entering the horse's environment. They help separate horses that are not compatible, protect pastures that are not suitable to be grazed, and provide boundaries for other essentials such as exercise paddocks, round pens, riding arenas, and protecting the horses from driveways.

(6) Fencing type depends on what type of horses will be managed, with draft horses requiting taller and stouter fences than miniatures, mare and foal pastures requiring safe, solid fencing to contain curious foals from danger, and old, pleasure horses that are used to fences requiring a minimum fence requirement.

(7) When fencing stallions, unacquainted horses, or very valuable horses, you may want to double fence between paddocks or separate pastures, allowing a twelve-foot empty aisle between the two areas.

(8) If activity is expected on the inside of the enclosure, then the boards (or other material) should be on the inside. This is primarily because of safety reasons in riding arenas where the fence surface protects the cart or the rider's leg from hitting the post.

(9) The higher the animal density, the stronger the fence needed.

(10) The arrangement of fences and gates should depend on whether it is necessary to allow the horses to get into a building or shelter to access water. Horses tend to congregate near shelter, feed, or water. Plan your gates and access to water so that horses can be turned out into the paddock; and then by opening or closing the gate you may have them in the pasture.

(11) Provide at least one small (less than ¼ acre) paddock to contain the horses when you want them turned out, but not put them on the pasture.

(12) Fence around or remove desirable trees, wild cherry trees, red maples, black walnut, and large apple trees.

(13) Prices for fences range from less than $1.00 per linear foot to more than $4.00 per linear foot. Your ability to build the fence and the availability of time are factors to consider. Fences such as high-tensile wire and polyvinylchloride fences should be installed by professionals.

(14) “Strong fences make good neighbors” is not just an old saying.

E. **Hay for Horses:** Good quality roughage (hay or pasture) should always be the foundation of any

ration. The only exception to this is the young foal. Adequate roughage should be available and

consumed by the horse and the remainder of the ration can be provided from concentrates (grains and supplements). Many mature horses can be fed hay only, along with salt, appropriate minerals, and water. Since pastures are seasonal or not available to all horses, attention should be paid to feeding good quality hay as the basis of rations. Hays of various types are higher in crude fiber than grains. Sufficient fiber is important to: a. provide bulk to prevent compaction of feed mass in the intestinal tract which can result in constipation, b. stimulate proper intestinal motility (movement), c. provide fiber which microorganisms in the large intestine breakdown and produce energy for the horse, d. satisfy the psychological need to chew, e. satisfy the psychological need to feel “filled”, f. provide for a balance of nutrients not found in grains, and g. help minimize the risk of diseases such as laminitis (founder) and colic which occur more often on high grain rations.

(1) The nutritional value of hay is determined by the kinds and proportions of foliage present, the stage of maturity when harvested, handling during the harvesting process, and types of storage and length of time in storage before feeding. Some nutrients such as vitamin E decrease rapidly in storage.

(2) To be of good quality and have maximum nutritional value hay should have bright green color (note: preservatives used during harvesting might mask poor quality hay that was not handled properly). The hay should have a fragrant smell, be soft and pliable when touched, have fine stems and abundant leaves, and be free of dust, mold, foreign material, and weeds.

(3) If a horse owner is not experienced in judging hay quality they should contact their extension agent, a veterinarian, or an equine nutritionist for advice. Appearance of hay can be deceptive so the only accurate and reliable method of determining nutrient content is to have it analyzed by a reputable laboratory.

(4) Horse farms are the only type of livestock enterprise which routinely purchases roughage on a monthly or bi-monthly basis. Purchasing a year’s supply of hay at

one time will reduce cost, especially if hay is purchased during or shortly after harvest when prices and shipping costs are lower.

(5) Some tips that may be useful when purchasing hay: a. Purchase from hay brokers that supply large quantities or from a local grower. b. Shop around as there is a great deal of variation in hay prices, especially at harvest when there is always speculation occurring. c. Develop a list of hay suppliers and always try to add to it through contacts in both the horse and livestock industries. d. Purchase hay by the ton not by the bale. Bale weight varies depending on the way in which the hay was made. e. Purchase hay based on specifications not on the species you are feeding. f. There is no such thing as "horse hay".

(6) When asking a supplier to provide prices on hay, you need to provide the following information on the type of hay you are looking for: a. Plant contents—**Alfalfa** for young horses, mares in early lactation, high performance horses); **alfalfa-grass** for most horse types, especially if it is of high quality; **grass** which is the most useful for mature horses, but may need to be significantly supplemented for horses with higher requirements. b. Cutting—**First cutting**, needed in the largest quantity on most horse farms. **Second cutting** primarily used for young horses, lactating mares, show and performance horses. **Third cutting** usually makes no sense on a horse farm, too expensive. c. Quality—**High quality**—green, leafy, 14-18% crude protein for young horses, lactating mares, show and performance horses. **Average quality**—more mature, not as green, 10-14% crude protein, used for mature horses usually fed free-choice. **Poor quality**—very inexpensive, brown, stemmy, must be supplemented with grain, used only when there is a substantial cost savings.

F. **Grain feeding**: Which horses need grain? As a rule, grains are not needed in a horse's diet unless the horse is unable to maintain its normal body weight on hay or pasture alone. In other words, when the horse is eating all the hay he can possibly eat but still losing weight, or not maintaining weight at an ideal healthy level, a more concentrated source of calories is needed. Grain is usually **not** needed for horses in the following categories: a. adult horse at maintenance (no work), b. adult horse in light work, c. breeding stallions when not actively breeding, d. all ponies, e. breeding mares when not pregnant or for the first third to half of pregnancy (assuming the mare is in good body condition to begin with).

(1) Grain will usually be required for horses in moderate (over one hour per day on a regular basis),

heavy or endurance work, for mares in the last half of pregnancy, for lactating mares, for growing

horses, for stallions during the breeding season; and for any horse that is not holding weight well.

(2) The best indicator of when to begin feeding grain is body condition. There are rules of thumb and complicated equations you can use to calculate the horse's predicted energy needs and diet, but in the end the most reliable indicator is still how well the horse looks—how well he is holding his weight. A good estimate of body condition can be made by placing your hands over the horse's rib area, and over the pelvis. Compare the horse to others of similar size and breed. If uncertain, ask a friend, veterinarian, or extension agent if the horse's body condition is adequate. Ignorance is no excuse for a starving horse, and when the horse is in its winter coat visual observation is not an adequate indicator of condition. Feel your horse's daily so that you become accustomed to changes in their condition.

(3) A common mistake is to use the size of the horse's abdomen ("belly) to judge how fat the horse is or, conversely, how thin. While horses at both extremes of abdominal size (huge, swinging belly versus severe tucked-up, fish-like appearance) are obviously too fat or too thin, abdominal size is influenced by factors other than amount of body fat. Horses on a hay-only diet tend to have larger abdomens because the diet is bulkier and harder to digest. Excess gas and fluid from inefficient digestion as well as excessive fluid and undigested feed in heavily parasite-infested horses also make the abdomen large. It is possible for a horse to have a big belly but have prominent ribs and top line as well. Such a horse is malnourished and underweight, despite the pot belly.

(4) Commercial grain mixes for horses are usually in the form of a sweet feed (moistened and held together with molasses). These are usually more expensive than plain grains but have some advantages. When using a sweet mix with a guaranteed analysis, the major and minor mineral and protein contents will be stable from batch to batch. Protein content is adjusted using such things as soybean meal or alfalfa meal, and in a few cases even milk proteins. This usually results in a better-quality protein overall and a vast improvement in the level of essential amino

acids. Sweet feeds are often vitamin fortified but should come with a "use before" date to ensure that the vitamin content is stable and adequate. If not, do not choose the sweet feed just for the vitamin content.

(5) Assuming the horse will consume 2 to 2.5% of their body weight in feed each day, the grain ration should not be over 50% of the feed consumed. Even 50% of the total feed consumption would be a high grain diet, reserved for horses in heavy work such as endurance horses or racehorses. Please refer to the last page of this handout for examples of daily nutrient needs and shifting calories from hay to grains.

(6) Grains should be stored in dry, dust free areas such as garbage pails or bins. Sweet feeds are particularly subject to molding in humid temperatures, so the container should not hold more than a few weeks' worth of feed. Rodent control is a must, as rodents have been documented to spread disease through contamination of grains (examples include botulism and EPM).

(7) Grain feeding should be measured in pounds. A quart of oats weighs approximately 1 lb. However, a quart of corn weighs approximately 2 pounds and a quart of sweet feed approximately 1.5 pounds.

(8) The rule of thumb for feeding grain is no grain for horses at maintenance or ponies: 0.5-1 pound of grain per 100 pounds body weight for light work; 1-1.5 pounds per 100 pounds body weight for moderate work and 1.5-2 pounds grain per 100 pounds body weight for heavy work. Introduction of grain, or changes in grain, should be done at a rate of no greater than one to two pounds per day, in divided feedings. Allow the horse to stabilize at this level for two to three days, then increase or change/substitute again, at the same rate.

(9) Some horses require extra grain only when working. Feeding it daily, regardless or work, may result in too great a weight gain. In those cases, omit grain on days the horse does not work.

G. **Basic horse health and common conditions**:

(1) **Vaccination**: I have included a separate handout detailing the vaccines available for horses and

typical vaccination schedules. Most pleasure horses will be vaccinated once annually for EEE,

WEE, tetanus, rhinopneumonitis, influenza, and (current recommendation) West Nile Virus.

Horses that are shown, in training at various facilities, or in heavy competition should have the

rhino/flu boostered more frequently and consider vaccination for strangles. Horses traveling to

states where raccoon rabies has become endemic should consider rabies vaccination. Horses near

bodies of water or traveling in endemic areas should consider Potomac horse fever vaccination. Ask

your veterinarian about the recommended vaccination schedule for your particular horse.

(2) **Coggins testing**: This is a simple blood test which will be required anytime a horse will cross state

lines or congregate with other horses such as at fairs, shows or competitions. It is required annually

and the test is good for 12 months within Michigan. It tests for Equine Infectious Anemia, which is

an untreatable, fatal condition in horses.

(3) **Deworming**: Horses are constantly exposed to parasites, every time they eat off the ground.

Horses must be dewormed every 6-8 weeks to avoid buildup of severe parasite loads. A listing of

common deworming products is provided. An alternate method of deworming is to purge the horse

with an ivermectin dewormer, then follow with daily use of a preventive product.

(4) **Colic**: This general term refers to spasmodic abdominal pains usually relating to the intestinal tract

in horses. Colic should not be ignored, and can range from severe colic, requiring surgical

intervention, to mild abdominal cramps which resolve with simple management such as walking

and time. I have provided a handout which covers the basic information regarding colic.

(5) **Foot problems**: The most observed hoof problems in pleasure horses are laminitis and abscesses. I maintain that every horse owner will have to treat a foot abscess at some time in their life. **Foot abscesses** (subsolar abscesses) require diagnosis and treatment by a veterinarian or farrier to lance the abscess and provide drainage for the foot. Horses with foot abscesses will present as three-legged lameness's (not using one leg or barely using the leg). They sometimes require antibiotic therapy and generally require a tetanus booster. **Laminitis** is very common in overweight horses at pasture but can occur also in horses that are not pastured. It is an inflammation of the feet and generally, presents as a horse that appears to be "walking on eggs" with the front feet.

Although all 4 feet are involved, the pain seems more intense in the forefeet. Laminitis requires aggressive farrier care, pain relief and diet modification and should be treated by a veterinarian in conjunction with an experienced farrier.

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