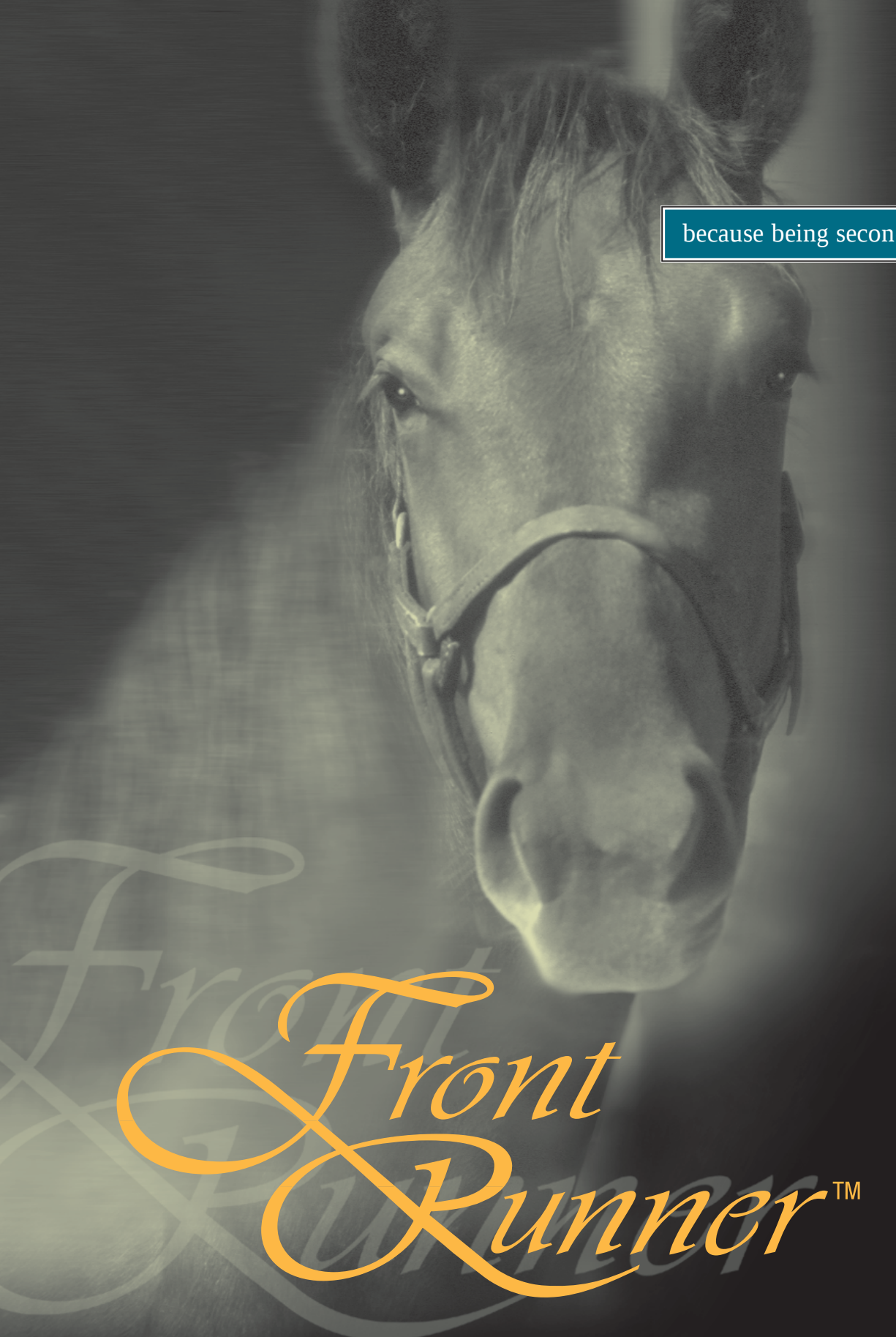




because being second isn't good enough

*Front Runner*TM



EQUINE FEEDING AND
MANAGEMENT GUIDE



TABLE OF CONTENTS

Introduction	2
The Five Basic Components of a Horse's Diet	3
Forages	5
Pastures	6
Selecting The Right Feed	7
Feed Storage	11
Horse Health	12
Parasite Control	13
Infectious Diseases and Vaccinations	15
Recommended Vaccination Schedule	15
Common Diseases and Ailments	16
Feeding Chart	18

Introduction

There have been countless reference books written on horse nutrition and horse management. This is an attempt at condensing some of the more relevant information into a useful reference guide. The information that follows is compiled from books, magazines, equine journals and

personal experiences and is designed to provide general information to help keep your horse healthy and happy.

Let's begin with the basics. If you have just recently become an owner, the first thing your horse is going to need is shelter and food. Since nutrition can be a very lengthy subject, we'll start there and include management information as it comes along.

All horses have certain nutritional requirements. The amount of protein, energy, vitamins and minerals that horses need to keep their bodies functioning normally are known as the maintenance requirements. These are the nutrients needed just to keep your horse alive and his body functioning normally. When you or the environment starts placing more demands on the horse, these requirements change. The more demands placed on the animal, the greater the nutritional demands. These demands come in many forms: the size, age, breed and the work that is expected from each animal. Fat insulation, parasites and disease, the environment, the individual metabolism of each horse and any demands for reproduction are all factors that can influence the amount of feed and type of nutrients needed.

For many owners, the horses they are feeding are older horses that do relatively little work. In most cases these horses can meet their maintenance requirements through simple feeding programs. Growing animals, breeding stock and performance horses will require a more complex diet specially designed to meet their nutritional needs. All feeding programs, simple or complex, need to be based on good quality hay and fresh clean water and take into consideration the need for five basic components in a horse's diet.



Five Basic Components

The five basic components of a horse's diet:

1. Water
2. Energy
3. Protein
4. Minerals
5. Vitamins

Water

Water is often overlooked as a dietary requirement but a deficiency in water can cause serious health problems such as dehydration, alkalosis, colic or even death. Did you know that a horse can lose basically all of its body fat and half of its body protein and still survive, but a loss of only 15% body water can be fatal? Make sure your horse has access to clean fresh water all the time. As long as the horse has access to fresh water, he will drink enough to meet his requirements. On average a horse will drink up to 10-15 gallons per day but lactating mares or performance horses can drink as much as 30 gallons within 24 hours. If you find yourself filling buckets more than twice a day put a second or third bucket in his stall. And remember reduced water intake leads to reduced feed consumption so if he is not drinking, he is not eating either.

Energy

The fuel needed for maintaining normal body functions and normal body temperature is supplied by energy. A horse's requirements for energy are greatest during lactation, growth and work. Carbohydrates and fiber are the main sources of energy in horse feeds with fats being a secondary source. Grains are the most common source of carbohydrates.

The energy status of a horse is fairly easy to evaluate by looking at his overall body condition. A horse should be maintained at all times in a moderate condition with the ribs covered but still able to be felt and the top line relatively flat when viewed from the side. Thin horses are more susceptible to disease and parasites and they will not perform as well. Fat horses also exhibit decreased performance. One of the most noticeable effects of excess weight on a horse is increased sweating. The body is unable to get rid of any extra heat being produced because the extra layer of fat provides increased insulation. Overweight horses may also exhibit respiratory difficulties and joint problems in some cases. The only way to correct obesity is to make sure the dietary energy intake is less than the energy utilization. In other words your horse should not be taking in more energy than he is burning off. The best way to do this is to decrease feed intake gradually and increase exercise.

Five Basic Components *cont'd*

Protein

Proteins are complex compounds made up of amino acids. These amino acids are used by the body to build and maintain several tissues, but mainly muscle tissue.

The horse's age and stage of development, weight, growth rate, and breed determine the amount of protein required by a horse. Young growing horses should not be fed an excess of protein (more than 2x the required amount is considered excess) as high protein has been associated with certain developmental orthopedic disease. Excess protein fed to performance horses is broken down and used as an energy source. When protein is used as energy it is very inefficient and produces extra body heat that can inhibit performance.

Grass hay and unfortified grains are often low in protein. Deficiencies in protein can lead to reduced growth, weight loss, reduced performance and endurance, rough or coarse hair coats and slow hoof growth. To compensate for the low protein in certain feeds Front Runner 10% or 30% Supplement can be fed mixed with home grown grains to form a balanced ration or alone as a low calorie concentrated source of protein, vitamins and minerals.

Minerals

A horse's mineral requirements are very complex and often misunderstood. In most cases it is not so much the amounts of mineral that is important but the balance between them. In some cases, an excess of one mineral can lead to a deficiency in the second. Calcium is a good example of this. The total calcium to phosphorus ration should be greater than 1.5:1 and less than 4.0:1.

Vitamins

Healthy horses meet their vitamin requirements from their feed and forage. Pasture is an excellent source of vitamins. For example pasture provides carotene which is converted by the body to Vitamin A. Younger horses, performance horses and horses under greater than normal stress due to disease or the environment may require additional vitamin supplementation. Front Runner offers several choices for vitamin and mineral supplements. The Front Runner Horse Block is an alternative in situations where pastures may be of diminished quality such as in the fall and winter or during droughts. The block provides free choice protein, vitamin, and mineral supplementation and is suitable for all classes of horses. If your horse is on an all pasture or unfortified grain diet, you should consider the block as a source of essential vitamins and minerals.



Forages

Why is forage so important? Forage is important because of the design and function of a horse's digestive system (see page 19 for diagram). Horses are classified as post gastric fermentors or non-ruminant herbivores and their digestive systems differ greatly from that of a cow.

The horse's digestive tract is much smaller and consequently, it cannot eat as much forage as a cow. A horse is only able to break down about 30% of the cellulose in feed. The hindgut is the main site of microbial activity in the horse as compared to the rumen in cattle. The amount of bacterial synthesis and the efficiency of absorption of nutrients synthesized by the microorganisms are lower in the horse than in the cow.

Forages are the fiber portion of the horse's diet and are fed either harvested as dried hay or unharvested as pasture. One reason the fiber is necessary in a horse's diet is for use as a source of energy for the microorganisms in the cecum and large intestine. The by-products of microbial fermentation provide a source of digestible energy for the horse. The indigestible portion of the fiber is needed by the horse for maintaining normal pH in the digestive tract and also for keeping the GI tract functioning as it should. The indigestible fiber also helps to fill the gut so that intake of carbohydrates is not too rapid. Rapid intake of cereal grains, which are high in carbohydrates, could cause colic, diarrhea, and acute laminitis.

Feeding an inadequate amount of forage to horses that aren't on pasture will not only increase the risk of diarrhea, colic and founder; it will also result in behavioral problems. Just like a bored child, horses with nothing to do are more likely to develop negative behaviors. They will chew on wood (crib), suck wind, head bob or weave, and chew on other horse's manes and tails to name just a few annoying and destructive habits. Wood chewing can be an especially big problem for your horse and your barn. Not only can a wood chewing horse do some major damage to your barn and fences, it can also result in splinters in the mouth and throat, or cause intestinal obstructions that could be fatal.

Harvested forages must be high quality and free from weeds, dust and mold. It should be green and leafy with fine stems and smell nice and fresh. Moldy or dusty hay is of no nutritional value and will cause more problems than it is worth. Dusty hay is often associated with respiratory problems such as heaves (Chronic obstructive pulmonary disease), an allergy to the fungal spores in hay or bedding.

Hay can be of either the grass or legume variety. Timothy, orchard, brome and Bermuda grasses make excellent grass hays. They are very palatable and less likely to be dusty or moldy than legumes although the nutrient content is lower. Legumes such as alfalfa are higher in nutritional value and generally contain 2-3 times more protein and calcium and more soluble and non-fiber carbohydrates than grass hays. Because of the increase in these nutrients legumes are the preferred hay during lactation, pregnancy and growth. If given free access most horses will consume more legume hay than grass hay, in part because legumes have nice green leaves and tender stems. No matter what kind of hay you are feeding, the amount the horse will consume is directly related to the hay quality.

Pastures

Allowing access to pasture is another method of insuring many of your horse's nutritional needs are met. Pastures have two purposes for the horse: to provide feed and to provide exercise. It goes without saying that your pasture should be well fenced and free from holes and debris

that might cause injury. There should be easy access to fresh water and shelter (either man made or from trees and brush) and companionship (from other horses or animals).

With proper management, even a small pasture can help to reduce your feed costs and barn work and increase your horse's enjoyment. However if the pasture is overgrazed, not properly irrigated, fertilized or managed for pests and weeds the benefits will be lost.

Most pastures contain a variety of different types of grasses. The best nutrient values are seen with the spring and fall growth. The younger the plant, the more digestible it is and the better it tastes. Since horses tend to be selective they will eat the youngest most tender grasses first and leave the older more bitter stems for later. Eventually pastures that are not managed will be full of older, less digestible grasses. Rotating pastures with cattle, which aren't as selective, or mowing your pasture will help keep it in top horse condition.



Selecting The Right Feed

Each horse is an individual and in an ideal situation, the feeding program for each horse should be developed to meet the individual's needs. This is not practical on most farms, from a time and money stand

point, and so the best alternative is a phase feeding program that meets your horse's needs at each stage of his life. Front Runner has developed a phase feeding program based on the horse's requirements at any given age and level of work. You, as the owner, need to evaluate your horse's needs and choose the phase best suited for your horse.

The Pleasure Horse

Suppose your horse is standing happily in his pasture looking very healthy and happy. All of his nutritional needs are being met. But what happens when you start to work him a little more? Those trail rides and lessons require an energy expenditure on your horse's part and just as we wouldn't ask you to ride without having a good breakfast; we need to make sure your horses get enough nutrients to enable them to work efficiently. A good feeding program for pleasure horses is to feed the amount of forage needed for maintenance and then to feed as much grain or formulated ration as needed to provide energy for work. You could try to meet the increased energy needs by feeding forage but it would be very difficult for the horse to consume enough to meet its nutritional needs. The amount of feed fed should be adjusted on an individual basis so that the horse maintains optimum body weight. If your horse is too thin he won't have enough body fat to use as a reserve source of energy. He will tire more easily and will have a hard time keeping warm in the winter; couple that with the layer of fat under his skin decreasing heat loss, and your horse could experience decreased performance ability and increased heart and respiratory problems.

In an attempt to increase the energy content of your horse's diet it is extremely important to keep the correct balance of grain to forage. Feed the grain in 2-3 small meals per day. Too much grain will not only give your horse excess energy and make him hard to handle it can also cause colic and laminitis and other severe health problems described in more detail later. You also need to ensure the amount of forage consumed is never less than 1.0–1.5% of body weight per day and it is recommended that forage makes up one-half of the total weight of the diet eaten. To keep your pleasure horse healthy you need to feed him enough forage to meet his maintenance requirements and enough grain to meet the extra energy expenditures. Front Runner Phase Four 10% Pleasure is a good way to add the extra nutrients to your horse's diet and is appropriate for mature pleasure horses, open and early pregnant mares. It will provide the proper protein, vitamins and minerals without unneeded energy.

Performance Horses

If you take the light work one step further and classify your horse as a performance horse, then his requirements increase. These horses need larger quantities of energy to perform to the best of their ability therefore they must be fed a greater amount of feed.

For performance horses the nutrients of greatest concern are water, body salts and electrolytes,

Selecting The Right Feed *cont'd*

and the nutrients needed for energy. A horse can lose basically all of its body fat and half of its body protein and still survive, but a loss of only 15% of body water is fatal. When a horse works 75-80% of the energy

used in the body is given off as heat. This heat is dissipated throughout evaporative cooling of sweat on the skin and the respiratory tract. While sweating helps to cool the horse, it results in the loss of water, sodium, chloride, potassium, and small amounts of calcium and magnesium. Preventing these losses through the use of electrolytes and by ensuring the horse drinks enough water will help prevent serious conditions such as alkalosis and exhaustion, which result from dehydration.

Feeding the performance horse requires nutrients that are going to increase the energy density of the diet. By this I mean the nutrients needed are those that will provide the most energy in the most compact package. The nutrients that will do this are those that increase fat, protein and starch and decrease fiber. This is accomplished by feeding a relatively high grain, low forage diet; although forage should still make up one half of the weight of the diet eaten.

Front Runner Phase Three Performance is a specially formulated feed designed to meet the energy, protein vitamin and mineral demands placed on the performance horse. The energy sources in the feed meet the requirements for anaerobic and aerobic activity, which makes it suitable for all categories of performance.

Broodmares

If you are breeding your mare, then you have probably read as much as possible and are quite knowledgeable on how to keep your mare healthy for the next 11 months. It may come as a surprise to you to know that mares that are not pregnant and those in early gestation have only maintenance nutrient requirements. It is not until the last 3 months of gestation and during lactation that a mare's nutritional needs progressively increase (10-20% during last trimester and 80% during lactation). This increase in nutrient demands is due to the rapid growth of the fetus during the last 90 days of gestation (about 60 % of weight of fetus is added at this time about a pound a day!).

The mare must take in enough nutrients to meet her maintenance needs plus the growth of the foal. For a mare to maintain body condition during pregnancy, her weight must increase by an amount equal to the foal's birth weight plus the weight of the placenta and fluids. This gain usually equals 9-12% of the mare's pre-pregnancy weight. The amount of feed needed to support this gain varies with differing climates, increased work or exercise and higher milk production. Mares should be moderately fleshy but not fat at foaling and should maintain this weight until weaning. A thin mare at foaling may have a decrease milk production and therefore foal growth.

Lactating or last trimester pregnant mares that are eating mature grass pasture or hay or unfortified grain and not a complete ration may need to be provided with supplemental calcium, phosphorous, protein, and dietary energy. If analysis of the forage shows that it has enough energy but not enough protein Front Runner 10% or 30% Supplement can be added to provide the correct supplemental protein, minerals and vitamins. If the forage does not contain enough energy or protein

Selecting The Right Feed *cont'd*

a complete ration such as Front Runner Phase Two 14% Mare and Yearling can be fed with free choice forage.

During first 3 months of lactation typical light horse mare will produce about 3% of the mares body weight in milk per day. This production will drop to about 2% during the remainder of lactation. The mare must therefore be supplied with the nutrients needed for maintenance and the nutrients for milk production. If these requirements are not met the mare will loose body condition and have decreased milk production.

Front Runner Phase Two 14% Mare and Yearling has been formulated to meet the nutritional needs of pregnant and lactating mares. Phase Two ensures correct nutrients are available for the development of the fetus and milk production while maintaining the mares own body condition at the optimum level.

Growing Horses

Nutrient requirements for a growing foal are directly related to the animal's growth rate. The requirements for growth equal the sum of the foal's maintenance requirements plus the nutrients needed for the deposition of new body tissue. The goal when feeding growing horses is to maintain an even growth rate and prevent sudden growth spurts, which place extra stress on young joints and bones.

Nursing Foals

The milk produced by a well-fed mare is sufficient to meet all of the foal's nutritional needs for the first 2 months of life and all the mineral needs for the first four months. Most foals will nibble in mare's grain and forage within a few days of birth. This is an imitation behavior as opposed to a nutritional need.

After two months of age the amount of milk produced by the mare can not meet the foals nutritional requirements. When the foal is 1–2 months of age a specially formulated foal mix such as Front Runner Phase One 16% Foal can be introduced as a creep feed. Creep Feeding is useful not only for meeting nutritional needs but also for getting the foal accustom to eating solid feed in preparation for weaning.

By 5 months of age, an unweaned foal will spend 50% of its time eating. The amount of creep feed consumed is related to the amount of milk consumed. The more creep the foal eats the less it will nurse and visa versa. If the foal does not eat adequate amounts of solid feed before weaning a compensatory growth spurt occurs once intake is increased after weaning. This growth spurt increases the risk and the severity of Developmental Disease (DOD) a condition defined by abnormal bone formation and growth. The amount of grain being consumed by the foal should not be restricted until foals are consuming about 2kg/day or 5lbs. (at about 4 months) then the amount should be limited so that the growth rate does not become too rapid and risk of DOD is reduced.

Selecting The Right Feed *cont'd*

Feeding Weanlings 4–5 Months And Yearlings

At the weanling and yearling stages of development, hay quality is very important. High quality legume-grass mixed hay is ideal although top quality grass hay that is properly supplemented will supply similar nutrients.

80% of bone development occurs w/in the first year therefore Phosphorous and Calcium levels are critical. Deficiencies in calcium and phosphorus can lead to incidences of developmental bone disease. Calcium and Phosphorus must be supplied to meet the minimum requirements and be in proper ratio—the younger the foal, the more critical the ratio of calcium to phosphorus. Muscle development also occurs at rapid rate in young foals. This development continues at a reducing rate until about 5 years of age, at which time the animal has reached mature size. Because of this deposition, energy and protein are of great concern in growing horses.

Front Runner Phase One 16% Foal is specially formulated to insure proper Ca and P ratio and to supply high quality protein for growth and development. Front Runner Phase One 16% Foal is suitable for horses up to one year of age and should be fed with at least 1.5% of body weight as good quality forage.

Stallions

Often little thought is given to the proper feeding of stallions. This could account for conception rates of mares actually bred sometime being less than 50%. Stallions should be maintained on a 12% protein diet because the nutritional quality of the ration greatly influences sperm production and quality. Front Runner Phase Three 12% Performance is an ideal feed for stallions. The high quality protein sources and digestible fiber provide the breeding stallion with the nutrients needed to maintain his condition and meet the demands of reproduction.

Senior Horses

It is hard to define what an old horse is. We all know 18 year olds who still act as if they are 3 and many horses compete well into their twenties. If you use the American Quarter Horse Associations definition, an aged horse is anything over sixteen years old.

The most common complaint with older horses is the problem of maintaining body condition. This loss of condition is partly due to the older horses declining ability to digest fiber, protein and absorb phosphorus. When feeding an older horse you would want to provide extra protein (above 12%) and phosphorus (a minimum of .35%). Good quality young green forage would be more readily digestible than forage that is extremely mature when it is harvested and yeast cultures are added.

One of the most important considerations with an older horse is general health. It is easy to assume that an older horse losing weight just needs more feed but since they are more likely to





Feed Storage

have liver and kidney disease it is important to have a veterinarian rule out any serious illness. The vet should also do a routine check of your horse's teeth. Horses do lose their teeth as they age and it is important to take care of the ones they have left. A horse that has lost a number of teeth will drop partly chewed wads of hay out of his mouth. This is called quidding and can be prevented by feeding hay cubes or pellets. If your horse has trouble chewing the cubes you can soak them in water, an especially nice treat in the winter if you use warm water.

Front Runner Phase Five 13% Senior is formulated to meet the needs of your senior horse. The pellets have 13% protein and contain beet pulp as a source of fiber, so when fed at recommended levels no hay is needed. The pellets also contain yeast culture to increase overall digestibility, absorption and utilization of minerals and fiber.

While it is up to the feed manufacturers to insure the quality of the feed leaving the mill, it is up to you to make sure it is stored properly once you get it home. It is never a good idea to buy more sweet feed than you can use in one month or more pelleted feed than you can use in three months. During the summer you may want to consider purchasing even more frequently to reduce the risk of spoilage. Good storage facilities will reduce any loss of nutrient value or contamination to your feed. Your storage place should meet several requirements.

1. It should allow good ventilation of the feed and remain at a fairly constant cool temperature with low humidity. As temperature and humidity increase so do problems with mold and insects.
2. Feed should be protected from direct sunlight, moisture, mice, birds and other pests, and perhaps most importantly from horses and other livestock.
3. The storage area should be clean and in a convenient location.

Your storage facility will vary depending on the number of horses you are feeding. Clean metal garbage cans work well if you have only a few horses, however if you have a number of animals you may want to invest in a feed bunk or galvanized metal bulk storage bin. A good bin will reduce your costs and protect the feed from pests and spoilage.

Horse Health

Nobody wants a sick or injured horse, however, no matter how conscientious you are as an owner there will most likely be a time when your horse requires medical attention. The best approach to managing your horse health is to have a good understanding of what is considered “normal”.

A healthy horse will have alert eyes and ears, a shiny coat and an active tail, steady gaits, regular eating habits and be interested in the activity around him. When the eyelid is pulled down the membranes should be moist and pink. His urine and feces should be passed without effort and be free from any blood or pus. Fecal consistency will change with the diet but it should be neither too loose nor too dry. Any deviation from normal should be more closely examined. Normal resting temperature for a horse is 99 to 100.8 F and 38.3 to 38.6 °C, pulse rate 32–44 beats per minute and respiration 8–16 breaths per minute. Being able to measure these and identify when there is a deviation from normal is the first step in good horse health and a 5 minute check when you enter your horses stall will quickly tell you if there is a problem.

Any lameness or health issue that is causing the horse pain should be referred to a veterinarian as quickly as possible. A delay in treatment could mean the difference between a complete and speedy recovery and a more serious long-term problem. Using common sense when handling and caring for a horse will help to prevent most problems.

Every barn should have a first aid kit to deal with any minor cuts and injuries. A basic kit would include: antiseptic spray such as Antisep 2% or iodine spray, wound dressing or gauze, elastic or self adhesive bandages to wrap legs or hold dressings in place, an ice pack, scissors and a thermometer. This simple kit will help you deal with any problem until a veterinarian can be reached.



Parasite Control

One of the most crucial aspects of your horse's health is the control of internal parasites. Parasites are one of the most costly and harmful afflictions of the horse. Infestations can lead to colic, anemia, diarrhea, poor growth or weight loss, reduced stamina and decreased performance. Every farm, whether it has one horse or one hundred, should have an effective parasite control program in place. The goal of this program should be to decrease the transmission of parasites between horses and the environment.

The program should be aimed at controlling:

- Large and small strongyles in all horses
- Ascarids in yearlings and younger horses
- Bots in all horses after the first hard freeze.
- And other parasites that may be a problem in a particular area or with individual animals.

There are four aspects to a good control program: 1) The choice of dewormer, 2) The administration schedule, 3) Non dewormer management practices i.e. Environmental controls, and 4) the monitoring of results so that the program can be monitored.

Choice of Dewormer

There are five major chemical classes of wormers: (1) avermectins (2) organophosphate (3) tetrahydropyrimidines (4) benzimidazole (5) and piperazine. These drugs all have similar efficiencies and resistance and it is often recommended that a wormer from a different class be used on a rotating basis. Recent studies have shown that there is little difference between a rotational program and one that uses the same dewormer for an extended period of time. Eqvalan and Quest contain ivermectin and moxidectin respectively and are considered to be avermectins. The Mira all in one, Mira paste wormer and Safeguard are from the benzimidazole class. The Mira all in one also falls into the organophosphate class because it contains Trichlorfon. Piperazine can be purchased as a soluble powder and mixed into the feed or water. As long as the product remains effective you should develop a program, with the help of your vet, that best suits your farm.

Administration Schedule

There are three different types of administration schedules used in controlling parasites. Most commonly used is an interval-deworming program that involves treating every two months. On some farms where there is a particularly great problem, a non avermectin dewormer can be used once a month with an avermectin every two months. It should not be necessary in most cases to treat every month.

Parasite Control *cont'd*

A seasonal deworming program, which involves treating at critical times of the year, can be used for mature horses but is not recommended for horses less than one year of age. Seasonal programs

involve treatment in the spring before grazing begins in the pasture, in the middle of the summer and in the fall following a hard freeze. This type of program is not effective for young horse because ascarid, strongyle and bot control are necessary in young horses at all times. It is also important not to use a method on young animals that would cause a sudden parasite kill. Slow kill dewormers are less likely to cause complications such as impaction colic and stress on the animal.

Continual deworming programs involve the continual feeding of low amounts of deworming medications. This method may prove to be of questionable value however, as many small strongyles develop a resistance to dewormers used in this manner.

Consult you veterinarian to be sure you are following the proper program for your farm.

Environmental Control

Administering a dewormer should be only part of a good parasite control program. Management practices should also be implemented with the goal of minimizing the amount of fecally contaminated feed and water the horses ingest.

There are a number of ways in which this can be accomplished:

1. Minimize the consumption of feed from the ground.
2. Remove manure from stables, paddocks and small pastures frequently.
3. Let manure compost for a year before spreading it on horse pasture. This ensures that the heat of fermentation has killed all parasite eggs and larvae.
4. Do not allow pastures to become overgrazed. If horses are forced to graze forage close to the ground and around fecally contaminated areas ingestion of eggs and larvae is more likely.
5. Harrow pasture to break up fecal matter and expose larvae to heat from the sun. Do not harrow in damp weather as this only disperses the infective larvae over a greater area and will not kill them.
6. Keeping horses off pasture for 4–12 months ensures that parasite larvae are dead. Cooler, damper climates may require a longer time period as parasite eggs may survive even very cold winters.
7. Keep new horses or horses returning to the farm isolated for 7–14 days, treat them with a non-benzimidazole wormer, and vaccinate them if necessary. Most infectious diseases are contagious 7–14 days before clinical signs are observed. Isolating new animals will help to ensure the good health status of your herd.

Infectious Diseases and Vaccinations

A good vaccination program is another important component of maintaining your horse's health. The vaccinations given will vary from region to region based on a number of factors including: the prevalence of a disease

in a region or on particular farm, the number of horses on farm and their use, the degree of confinement, and the amount of contact with other horses. Like feeding and deworming programs, the vaccination program will need to be adapted and updated to maximize the herd immunity. At the very least, horses should be vaccinated for tetanus toxoid and encephalomyelitis every spring. Mares and stallions used for breeding and animals used for competition will require vaccination for influenza, rhinopneumonitis, strangles, and perhaps Potomac Horse Fever.

Recommended Vaccination Schedule

Disease	Primary Vaccine	Broodmares	Pleasure	Performance
Tetanus	2 doses 3-4 weeks apart	Annual 2-4 weeks prior to foaling	Annually	Annually
Equine Encephalomyelitis	2 doses 3-4 weeks apart	Annual 2-4 weeks prior to foaling	Annual in spring in temperate regions (Every 2-6 months in endemic areas during mosquito season)	Annual in spring in temperate regions (Every 2-6 months in endemic areas during mosquito season)
Equine Influenza	2 doses 3-4 weeks apart	Annual 2-4 weeks prior to foaling	Biannually and prior to any period of risk of increased exposure	Every 2-3 months
Rhinopneumonitis	2 doses 3-4 weeks apart	EHV-1 killed: 3,5,7,9 months of pregnancy EHV-4: Annual 2-4 weeks prior to foaling	Biannually and prior to any periods of increased exposure. Optional dependent on exposure- especially in older horses	Every 2-3 months
Strangles	2-3 doses 3-4 weeks apart	Annual 2-4 weeks prior to foaling- only killed products licensed	Every 6 months on endemic farms for killed vaccine. Annual boosters recommended for virulent live vaccine	Every 3-6 months on endemic farms for killed vaccine. Annual boosters recommended for virulent live vaccine

New vaccines and administrative options are being developed constantly. It is important to work with your vet to design a vaccination program for your horses.

Infectious Diseases and Vaccinations *cont'd*

The following is a brief description of some of the more common infectious diseases.

Contact your veterinarian to set up a vaccination schedule and if you suspect your horse is exhibiting signs of a serious disease.

Common Diseases and Ailments

Condition	Cause	Symptoms	Treatment/Prevention
Tying Up which can be classified as different conditions with similar symptoms two of which are: Equine Polysaccharide Storage Myopathy EPSM Recurrent Exertional Rhabdomyolysis RER	Excess amount and abnormal form of glycogen causes muscle to stop functioning properly. Irregular regulation of intercellular minerals. Exacerbated by stress and anxiety. Mainly fit horses.	Large hind quarter muscles become stiff, sweating. Stiff gait, horse shows signs of pain. May have dark urine.	Reduce carbohydrates that are fed for energy and replace with fats. Keep in pasture or pen for light exercise. Contact your veterinarian immediately.
Colic	A metabolic condition usually related to intestinal disorders, primarily impaction, due to improper feeding, watering or working.	Pain due to the overproduction and accumulation of gas. Sweating, straining, groaning, distended abdomen, rolling, biting and kicking at abdomen and flank, constipation.	Contact your veterinarian immediately. Walk horse slowly to prevent it from lying down, rolling, eating or injuring himself. Tranquilizers, painkillers, antiferments, mineral oil, and/or a stomach tube may be used by vet in treatment of colic.
Laminitis (Founder)	A metabolic disorder associated with over consumption of grain, drinking cold water while hot from exercise, toxemia as a result form metritis or other unknown inciting agents	Extreme pain, stiffness in front and hind feet, sweating, lower legs and hooves warm to the touch. May be associated with fever and/or colic.	It is essential that medical treatment be sought immediately. The longer the condition of extreme heat persists the more permanent the damage will be. Stand the horse in a cold water bath or spray with cold water hose while waiting for the veterinarian.
Heaves	A condition of poor management often associated with feeding moldy, dusty hay or grains, use of dusty straw or shavings as bedding, or stabling in poorly ventilated or overly drafty stalls.	Symptoms include difficulty breathing and an audible wheeze, coughing and dilation of nostrils. Horse tires early during exercise.	If heaves is allowed to develop extensively treatment often produces poor results. Antihistamine injections may give temporary relief. Reduce exposure to dust by feeding a completely pelleted ration, sprinkle or soak hay with water.
Distemper (Strangles)	An extremely contagious bacteria disease usually initiated by stress conditions such as exposure to wet, cold weather, shipping, fatigue and respiratory viral infections.	Depression, loss of appetite, a temperature of 104 °F to 106 °F, cough, discharge from nose, enlarged glands under the jaw. These enlarged glands will eventually break open and discharge a pink pus.	Complete rest and isolation from other horses. Provide clean, fresh water, appetizing feeds, and draft free shelter. Antibiotics and sulfas may be provided by veterinarian. Aid in prevention by vaccinating.

Infectious Diseases and Vaccinations *cont'd*



Common Diseases and Ailments *cont'd*

Condition	Cause	Symptoms	Treatment/Prevention
Equine Influenza	A highly contagious viral disease.	Severe depression, high temperature, complete loss of appetite. Watery discharge from eyes and nose, inflammation towards the legs.	Consult your veterinarian for antibacterial therapy to prevent pneumonia. Dispose of infected bedding, sanitize feeding and watering equipment, disinfect trailers used to transport animals, control insects, isolate sick or newly arrived animals. Vaccinate annually.
Tetanus	A disease caused by the toxins released by anaerobic bacteria that grow in deep puncture or lacerated wounds.	Stiffness in the head and neck. Animal has difficulty chewing and swallowing. Violent spasms or muscle contractions brought on by the slightest movement or noise.	Death usually results in 80% of all cases due to exhaustion or paralysis of vital organs. Contact your veterinarian. The best prevention is with tetanus toxoid vaccine.
Equine Encephalomyelitis (Sleeping Sickness)	A viral infection transmitted by mosquitoes with the highest incidence from June to November	Aimless walking, Horse stands with head lowered and grinds teeth, inability to swallow and paralysis of lips.	Death usually results in 50% of the cases. Vaccination prior to mosquito season is highly recommended.

Feeding Chart

The Complete Equine Feeding Guide								
Type of Horse	Approx. Weight lb***	Age	Type of Front Runner Feed	Type of Hay* or Pasture			lb/Hd/Day**	Min. Hay*** or Pasture Equivalent (lb/day)
				Grass	Mixed	Legumes		
Nursing Foals	300	1–3 mos.	Phase ONE	•	•	•	3	6
Weanlings	495	6 mos.	Phase ONE	•	•	•	5	7
Yearlings	770	12 mos.	Phase TWO Phase ONE	•	•	•	6	13
Long Yearlings	925	18 mos.	Phase TWO	•	•	•	7	13.5
Lactating	1100	3+ yrs.	Phase TWO Phase ONE	•	•	•	12	17
Pregnant Last 90 days	1100	3+ yrs.	Phase TWO	•	•	•	6	16
Two-Year Olds	1045	24 mos.	Phase THREE	•	•	•	8	14
Stallions	1100	3+ yrs.	Phase THREE 10% Supp 30% Supp	• •	• •	• •	6 2 1	16 20 20
Performance	1100	3+ yrs.	Phase THREE	•	•	•	10	10
Broodmares (Open or Early Pregnant)	1100	3+ yrs.	Phase FOUR 10% Supp 30% Supp	• •	• •	• •	5 2 1	15 17.5 17.5
Mature Idle Horses	1100	3+ yrs.	Phase FOUR Phase FIVE	•	•	•	5 16.5–22	15
Older Horses	1100	15+ yrs.	Phase FIVE	•	•	•	16.5–22	–

* Protein content of hay assumed to be: Grass 8%, Mixed 12%, Legume 16%.

** Amount of feed required will vary depending on age, level of activity, desired growth and quality of forage available and general condition of the horse.

*** Pasture equivalent means similar dry matter intake.

**** Weights will vary depending on breed and body condition of animal.