



Common Feeding Boo-Boo's – Horses

Boo-Boo #1: A straight (or high percentage) alfalfa diet!

Here are the conditions that are precipitated by too much alfalfa:

- Diminished Performance

Alfalfa hay generally runs at least 18-20% protein, often higher. A mature working horse only requires about 12% protein. Dr. Michael Glades concluded after a study at the University of Maryland that horses with excess protein in their diets ran slower race times than horses receiving the NRC recommended amounts. He found that for each 1 000 grams of protein that a horse ate above his basic needs, the racing times slowed 1 to 3 seconds.

Dr. Kerry Ridgway of Aiken, SC, points to an all-alfalfa diet as the cause of higher body temperature in working horses, caused by the extra work required by the internal organs to convert the protein to usable energy. He feels this leads to excess sweating and electrolyte loss, which can in turn lead to dehydration, impaction and colic.

- Hypothyroidism

The high calcium levels in alfalfa occupy the iodine receptor sites in the body, and the resulting iodine deficiency contributes to lowered thyroid function. Infertility, laminitis and founder, sluggishness and weight gain, or adrenal burn-out with attendant weight loss and hyperactivity, are all related to reduced thyroid function.

- Thumps

Technically "synchronous diaphragmatic flutter", this happens when the excess calcium in a high-alfalfa diet causes the parathyroid gland, which controls calcium balance in the body, to actually shut down calcium absorption in order to prevent overload. Then, upon exertion when the calcium is needed to buffer the acid generated by exercise, the gland has lost the ability to respond in a timely manner and the muscles of the diaphragm spasm in time to the heartbeat, due to the calcium deficiency. Rarely life-threatening, but will sure bring your endurance or performance horse to a screeching halt.

- Bad Attitude

The calcium overload suppresses magnesium, which is the relaxation-inducing mineral for both the body and the mind, so the horses (especially mares!) become tight and sore, as well as flighty. A belligerent, cranky attitude is not far behind, as the horse expresses displeasure at being pushed when in pain. The kidneys and liver are also stressed by elimination of the acid-forming protein, and the liver is the organ energetically associated with anger.

- Tying Up

Lactic acid from exercise is formed very quickly in a horse that is already acidic from too much protein. The calcium:magnesium imbalance described above also leads to muscles that spasm and are unable to release.

- Kidney Problems

The old timers who cautioned that you would "burn out the kidneys" feeding horses alfalfa knew their stuff. Just like with a person, when you have kidney stress, cut back on protein immediately. If you smell ammonia in your horse's urine or stall, you are in trouble, as the body is in last-ditch emergency compensation mode and the alkaline reserve has been used up. Alfalfa-fed horses nearly always have sore backs from kidney stress.

- Scratches

Nearly always, you can halt this condition by stopping alfalfa and other legumes like clover. There is a photosensitivity reaction that takes place from compounds in legumes, triggering lymphatic congestion, then oozing and scabbing and usually starting on the white legs or body areas. Even if there are no white areas, the lymphatic congestion induced by the high protein and fluid retention makes any little skin break a prime site for bacteria to gain a foothold.

- Increased Incidence of Disease

Dr. Swerczek at the University of Kentucky proved reduced immune function on alfalfa diets by infecting two groups of horses with strangles. The grass hay-fed group did not become as ill and did not become carriers of the bacteria, while the alfalfa-fed group manifested more severe symptoms and became carriers. You should know by now from the common thread of pH balance that runs through our teachings that protein (nitrogen) is acid-forming, and that bacteria and disease thrives in a too-acid environment.

- Enteroliths

These stones that form in the gut are composed of ammonium, magnesium, and phosphate and need all three components for formation. If you take away the high protein alfalfa, the ammonium is not formed and stones are highly unlikely. UC Davis recommends that any horse who has ever had stones be alfalfa-less for life.

- Developmental Bone Disease

A very lengthy subject, but suffice it to say that 20% protein or higher alfalfa may produce rapid growth, but just like in wheat that has had too much nitrogen, the support system suffers and weakens; the grain topples over before harvest, and the horse is unsound by the time it is two. We have a rule of thumb that no mammal should have a higher % of protein in the diet than is present in the mother's milk. Mare's colostrum is high initially, around 18%, then drops to 12% for the duration of lactation.

- Arthritis and Degenerative Joint Disease

This scenario happens down the road, as the body pulls alkalizing minerals from the skeleton to buffer the acid from the high protein alfalfa diet. Horses fed alfalfa as youngsters will be the first to go, since epiphysitis and OCD predispose to future problems.

- Colic

Alfalfa is lower in fiber than grass hay, especially the fine-stemmed leafy alfalfa usually favored by alfalfa fans. Add to that the fact that feeding free-choice alfalfa will result in a horse that closely resembles the Goodyear Blimp, and you have a scenario where a grazing animal who is designed to have the gut working pretty much all the time, is reduced to eating 7 or 8 pounds of rich food twice a day. A recipe for disaster.

So, alfalfa is great for dairy cows.....and maybe feedlot steers. That's it. The alfalfa diet for horses is largely a West Coast phenomenon, fueled by lack of top quality grass horse hay in many areas. But be aware of the silent destruction that happens. Karen E. Hayes, DVM, feels that no horse over age 15 should have any alfalfa at all, and that 20% of the hay ration as alfalfa should be the upper limit for horses under age 15. So for a foal or youngster who is only eating 5 to 10 pounds of hay a day, 1 to 2# of alfalfa would be the upper limit. Four to five pounds of alfalfa would be the max for a 1000# working horse that gets 20# or more of total hay a day, and that could be too much for some horses. Feed top quality orchard grass or bluegrass, coastal bermuda, timothy, brome, etc. Remember that oat and barley hays are actually grains, not true grasses. I say all of this as the former Queen of Alfalfa! A couple of decades back, I would have punched you in the nose for showing me this article that I am now writing, but oh, how we live and learn!

If you MUST feed more alfalfa than recommended, here is how you can help mitigate the damage:

Feed extra minerals to replace what will be leached from the skeleton and tissues! In addition to Dynamite or Dynamite Plus as the basic supplement, put out 1 to 1, 2 to 1, Izmine and NTM Salt all free choice as usual, but also add the VM Salt Mix and add in 1 ounce of Izmine for each pound of VM Mix, fed as free choice. Put out some clean and mold-free, but maybe lower quality, grass hay just for chew-time and to keep the gut moving well.

Use DynaPro daily to assist in digestion as well and to keep the gut chugging.

Feed Easy Boy for extra magnesium for several days before and during performance events, to balance out the high calcium. Alternatively, use our new TNT product, which contains Dynamite, Izmine and Easy Boy plus Free and Easy joint supplement, in addition to other elements.

Best idea: convince your local hay grower to raise top quality mixed grass horse hay, fertilized with HumiZyme Rx! Even if you have to pay a premium price, it will be more cost-effective in the long run, when you see the increased health and performance, and longevity of your animals.

Boo -Boo #2: Heavily fortified sweet feeds!

Most areas have generic or name brand sweet feeds with added A, D, E, and inorganic minerals. These inorganic minerals can cost the body more in energy to eliminate them than they benefit the body. Chelated minerals are in a "pre-digested" form for maximum availability, and a balanced profile of chelated minerals is necessary, along with the inorganic forms. We don't want you to add the Dynamite® products to a fortified sweet feed and unknowingly create an overload or imbalance of vitamins and minerals. The balance of Dynamite® products is quite subtle, and at the very least you will get less-than-optimum results by feeding them with a fortified mix. Less is more! A plain, dry mix of corn, oats and barley with Dynamite® supplements added, and HES Pellets™ if you need more protein/fat, will be a better choice.

Corn is controversial for many people. It contains less fiber and lots more energy per pound than oats, and corn thus has an undeserved reputation for being a heating feed. In fact, oats generate more b.t.u.'s (heat units) in digestion than corn does! Corn is an excellent feed for horses. Be sure to measure it by weight, not by volume, as it is very dense. Barley likewise is a denser, more energy -packed feed than oats, containing less fiber. Many horses become hyper on oats, because oats contain an alkaloid called avenin that is a central nervous system stimulant. Horses susceptible to avenin do really well on rolled barley instead of oats, possibly with some added corn. Oats and corn half and half by weight works well for many horses, or you can feed 1/3 each of corn, oats and barley, again by weight. Or barley and corn, or straight barley. You need to observe your horses' response, and also determine which grains are highest in quality in your area. Ideally, our Complete Pelleted Grain Ration™ is the optimal way to go.

The molasses issue is also a heated one. Organic blackstrap molasses from your health food store is a very healthful food, high in iron, and very alkalizing. Unfortunately, this is not the sort of molasses that goes on feed grains! Heavy molasses sweet feeds look yummy to the owner (like granola!) and many horses develop such a sweet tooth that they have to be coerced into eating plain grains. Wouldn't your kid rather have Cocoa Puffs than oatmeal? A naturally nutritious grain crop with high mineral content will also have a high brix, which is the measure of natural sugar content. Trouble is, the mineralization of our soils is declining at such an alarming rate that most foods lack minerals and taste like cardboard. So to get the animals to eat these devitalized grains, the feed companies began adding molasses as a sweetener. Molasses will also conveniently disguise any mold or discoloration, and will dampen down the dust and cover other "yuck" as well. That leads to another issue, because adding molasses also adds moisture, which increases the potential for mold. So, chemical mold inhibitors and preservatives are often added - see where all this is going? Some authorities believe that one of the major causes of hyperactivity in children is preservatives. Molasses is also high in fluoride, which occupies the iodine receptor sites and can thus lead to hypothyroidism. And there is even more! Energetically, the stressed pancreas causes soreness in the lumbar area, so horses on sweet feeds will nearly always have sore loins and be unable or unwilling to "come round" or to use their driving muscles in a strong manner. Sugar also encourages water retention, so horses on a sweet feed will look like they have gained weight, but it is not healthy muscle tissue, they are just bulked up with water at the cellular level.

Going back to hyperactivity, there are many thousands of horses out there who are "sugar monsters". I had a 5 year old gelding who accidentally got some sweet feed one day while he spent some time at a boarding stable, and I had to peel him out of the rafters when I got him out to work him! He was "sugar free" his whole life until that day, and he acted like he was on speed! Any significant amount of molasses will cause an insulin rush, and a blood sugar high followed by a major blood sugar crash. Some researchers have even correlated large grain meals (especially sweet feed) and the resulting insulin rush with developmental bone disease in young horses. This glycemic response negatively affects the bone-forming cells, and leads to decreased bone density in any horse. Ideally, grain should be divided into several small feedings a day to avoid this insulin rush.

While we are on the subject of grains for horses, we might as well address acidity. A by-product of grain digestion is propionic acid. Horses that are acidic will tend to tie up, lose top line musculing, and be generally unthrifty. Haven't we all seen horses, especially at the track, who are eating 20+ pounds of grain a day and still look like greyhounds? Acid!! Horses were not designed by nature to eat large amounts of grain, nor to do the kinds of work that we ask of them. On Dynamite[®] products with our digestive aids, most people find that they can get by with far less grain because the horse is digesting the ration so much more efficiently. Cutting Futurity winner, Scott Martin, finds that he can feed only 3 pounds of the Complete Grain and maintain better weight and condition than on 8 pounds of the nationally-promoted sweet feed that he was using, along with better minds and fewer soundness issues! I know many pleasure riders, and even Western Pleasure trainers, who feed no grain, just 3 ounces of Dynamite Plus[™] and top quality grass hay, with maybe a little alfalfa. Remember that most minerals are alkalizing, and especially the Dynamite Plus[™] and Free Choices contain clay that helps to neutralize the acid as well. So - bottom line. Simple, plain grain or Dynamite Pelleted Grain Ration[™] and TNT[™] or Dynamite[®] or Dynamite Plus[™] as a basic package will give you optimum and healthy results, and save you money as well! A horse with a balanced and healthy body, and eating a balanced grain ration, will be emotionally and physically sound.

Boo-Boo #3: Feeding only inorganic minerals!

On the label, but not into the body, that's the story if you are not including amino acid chelated minerals in the diet. As a quick review, minerals must be bound to amino acid molecules (protein building blocks) in order to be efficiently absorbed. The amino acid seems to act as sort of a Trojan Horse for the mineral. Also, the molecular weight needs to be below 1500 daltons and the electrical charge of the mineral needs to be neutralized so it does not combine with a mineral of the opposite charge and thus become an unavailable compound. The carbonate, or oxide, or sulfate forms of the minerals are not nearly as available to the body as a true amino acid chelate. Imagine trying to push a volleyball, or even a tennis ball, thru the mesh of your screen door. This is what happens in the intestine when a large molecular weight mineral such as calcium carbonate comes

along.....it simply does not work until the body has used some dietary protein to combine with the mineral to absorb a little of it, but most of it sails right on out into the manure pile (or septic tank, for people).

With horses, you all are familiar with the legendary bone structure of the Irish horses or the Kentucky breeds. This is because the soil overlies limestone which is calcium carbonate. The grass roots grow down into the calcium-rich soil, and plants have a great ability to chelate the soil minerals so when the horse eats the grass or hay, that calcium is available. As Jim says, "If you put an iron nail into the soil, the plant that grows there will be rich in iron. But I dare you to put a handful of nails in the feed bucket and have the horse get that iron." Yet this is just what most feed companies are doing -- adding calcium carbonate, or iron oxide or copper sulfate and so on. Even the NRC recommendations for the amount of a mineral that a horse needs are based on inorganic mineral forms, amazingly enough, and likewise the US RDA for people. Isn't it amazing that this information is not yet taught at the University levels or applied to government standards?

Most people just read a label and say "Hey, look, this brand has more calcium, or iron, or whatever than that brand, and it is cheaper, too!" You might as well save your money entirely, because not only does the body not use the inorganic minerals very effectively, the organs of elimination are stressed by dealing with the unusable portion of the mineral and indeed can't always excrete it, so it can build to toxic levels in the tissues. Many horses and people are toxic and out of balance from mineral overload, in unavailable form. This is why, as a side note, many people observe that their horses become hyper if they feed some supplements, as the body goes into "red alert overload" mode. Inorganic calcium floating around, for example, can do a lot of ugly things. It can occupy the iodine receptor sites, causing the thyroid to slow down with resulting obesity, infertility and other problems. Since calcium goes to areas of heat and inflammation, unusable calcium can deposit in and stiffen joints, tendons and ligaments and provide great raw material for forming splints, spavins, and ringbone. In the kidneys and bladder, it can form stones. By suppressing magnesium, an unusable calcium overload contributes to tight muscles and anxiety. It can even cause the parathyroid glands to lose the ability to store and release calcium from the bones when needed, and you can end up with thumps in an endurance horse, or even a tied up horse. That cheap non-chelated mineral formulation from the catalog or discount store is looking a little more expensive all the time, isn't it? And yet, many medical advisors and TV advertising will even tell you to take antacids as a source of calcium.....not only is that virtually unusable calcium, but suppressing the stomach acid pretty much guarantees that the calcium will not be digested at all. Duh? My beloved aunt, who passed away a couple of years ago, was a registered nurse who suffered from osteoporosis to the point that she was totally stooped and under 5 feet tall in her old age, and yet she stubbornly clung to the advice of her internist to take her antacids for calcium.

So, the astute readers among you are asking, "Why are there also some inorganic minerals included with the chelates in the Dynamite[®] horse and dog products?" That is because research has shown that feeding 100% of a mineral as a chelate is too hot for horses, and for dogs to a certain extent. These animals in the wild do have a certain ability to utilize natural mineral deposits like some clays and dirt, much more than can a human. Indeed, the carbonate forms can act as a buffer. Also, the same research proves that the addition of about one-third of the particular mineral in chelate form "primes the pump" for better absorption of the non-chelated form of the same mineral in animal formulations. It is like the body gets the frequency of that mineral and then recognizes the need for it more effectively. A balance is preferable. (And this is also why we don't recommend feeding the Dynamite[®] products with a Brand X fortified feed - you can easily overload the system and create imbalance as you make the inorganic minerals in the feed more digestible). It is important that the full spectrum of minerals be supplied in chelated form. A cute trick that some feeds and horse supplements are using now is to include chelated copper which will really give a nice coat and bloom quickly, but then to save some money they don't include the related minerals like zinc, iron and manganese in chelated form. Conversely, Albion labs research has shown that you can create a copper deficiency in a dairy cow in just four days if the inorganic iron levels in the feed or water are too high. Yikes. Likewise feeding some of the iron tonics to horses can eventually suppress the copper and manganese needed for tendon and ligament strength. Balance is a key here, not short term gratification traded for long term disaster.

Trust the research behind Dynamite[®] products, going clear back to when Citation won the Triple Crown in 1948

on the original chelated mineral bloodbuilder formula that morphed into today's Dynamite® for Horses. We had a newspaper article a few years back in the monthly meeting notes, where a sportswriter was lamenting that the Thoroughbreds of today are nothing like in years past. It is unusual for a 3 year old to make all of the Triple Crown races let alone win them all, they usually drop like flies thru the season from various injuries and fatigue. Yet Citation not only competed in the series and won, as the article noted, he ran and won races before and in between the Derby, Preakness and Belmont! This is also a great place to mention the value of HumiZyme RX for putting more minerals back into the soil so that your pasture or hay can chelate them into the feed.....but that is another article!

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