RUTGERS
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Does My Horse Need Supplements?

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Does this scenario sound familiar to anyone? “My friends say I need to add expensive hoof/joint/coat/vitamin/mineral/etc. supplements to make my horse look and perform better. But I feed good quality hay as the majority of the diet, and a commercial feed at recommended levels. My horse is also happy, healthy, and undergoes routine veterinary care. What do I do, or how do I know if I really need these supplements?”



Figure 1. Does this feed room look familiar? Multiple buckets and containers containing various supplements. How many of these are necessary for your horse’s health? Photo credit: C. Williams

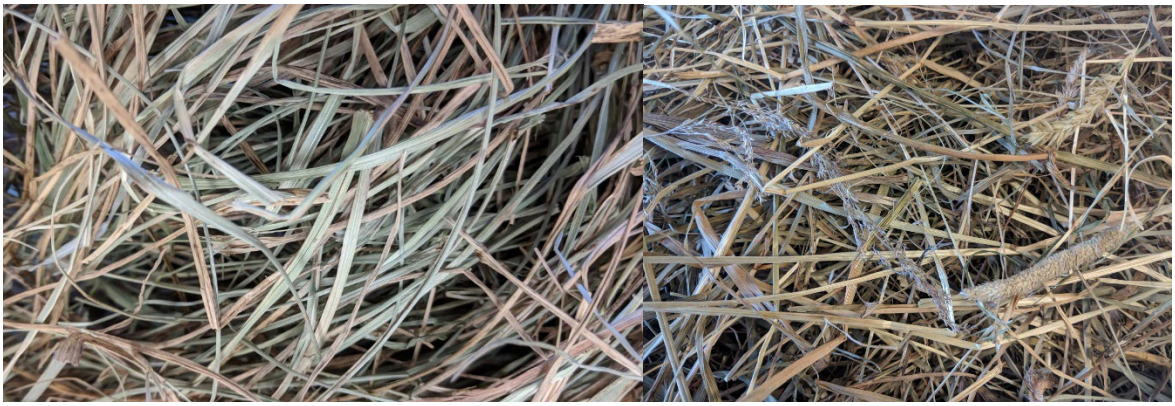
If even part of this story sounds like something you have encountered, you are definitely not alone. The short answer given by many equine nutritionists usually is: “If your horse is on a balanced diet and does not have any specific problems, then it most likely does not need any additional supplements.”

As the Rutgers state extension horse specialist who has spent a career researching horse nutritional needs and supplement effectiveness, I have extensive experience in this area. Nutrition management questions come up frequently, and answers can vary depending on age, use, health status, weight, and other factors specific to each horse. But how do you make informed nutrition decisions? In this bulletin you will learn about what constitutes a "balanced" diet, and several different types of supplements that can be used in certain situations. Hopefully, what you learn here can make you a more educated buyer when it comes to purchasing supplements for your horse.

What Makes Up a Balanced Diet?

A balanced diet includes the nutrients your horse requires each day in specific amounts to maintain health and allow for work, breeding, lactation, or growth. The horse requires water, simple carbohydrates, fibrous carbohydrates, protein, fats, minerals, and vitamins each day.

A balanced diet starts with good quality forage at a minimum of about 1.5 % of the horse’s body weight, free choice water, and white/plain salt. If your horse requires more energy (for exercise, pregnancy, lactation, etc.) than forage alone can provide, then concentrates such as commercial feeds can be introduced. Commercial feeds, when fed in the amount recommended on the bag by the manufacturer, already contain the proper balance of vitamins and minerals for a horse on good quality forage. It is important not to mix a commercial feed with other grains such as oats, or other commercial feeds. Mixing feeds disturbs the nutrient balance that was formulated to be ‘just right’ in the original feed.



Figures 2 (left) and 3 (right) are showing examples of a good quality hay (#2) with more leaves than stems and a light green color, and a more mature, lower quality hay (#3) with more thick stems and larger seedheads and brownish color. Photo credit: C. Williams

For maximum nutritive value, hay should be more green than brown, and soft and leafy instead of rough and stemmy. Immature hay will also have fewer or smaller seedheads than a mature hay. This indicates that it was cut at an early stage of maturity and contains more energy, protein, vitamins, and minerals, compared to mature hays which contain more fiber. The hay should also be free of mold, dust, weeds, and foreign objects.

What is a Supplement?

The basic principle of supplementation is to give a horse one or more dietary ingredients above what are normally required to meet nutrient requirements. However, supplements are also given with the goal of improving performance, preventing a problem from occurring, and to combat or manage a problem after it arises. Supplementation usually occurs in the form of feeding concentrate, dietary ingredients including bran and oats, or nutrients including vitamins, minerals, or fat. Many commercial supplements contain ingredients that provide one or more vitamins, minerals, amino acids (protein), fuel sources (carbohydrates and fats), herbs, and probiotics (bacteria and yeast). The Food and Drug Administration (FDA) defines a '**dietary supplement**' in human nutrition as:

> "A product taken by mouth that contains a 'dietary ingredient' intended to supplement the diet. The 'dietary ingredients' in these products may include vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, and metabolites. Dietary supplements can also be extracts or concentrates and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids, or powders..."

Nutraceuticals is also a word found often around the supplement arena. The word 'nutraceutical' comes from the words 'nutra' meaning nutrient and 'ceutical' or 'pharmaceutical' meaning a medical drug. '**Nutraceuticals**' are defined as:

> "Any substance that may be considered a food or part of a food and provides medical or health benefits, including the prevention and treatment of disease" by the Foundation for Innovation in Medicine (1991).

Nutraceuticals can include nutrients (e.g., vitamin E), derivatives of nutrients (e.g., glucosamine), or herbs. Herbal medicine, also called "phytomedicine," is the use of therapeutic plants, plant parts or plant-derived substances to aid in fighting against infections, diseases or enhancing overall health (more on herbs below).

The important thing to note is that the lack of federal regulation or quality control for animal supplements leaves the onus on the buyer to scrutinize each one before purchase, which can make the task quite daunting. However, if you try and follow these steps it should help you as the horse owner in the end.

1. Evaluate your horse's diet;
2. Determine if your horse has conditions, issues, etc. that may benefit from supplementation;
3. Select a product based on research-backed information on individual ingredients and amounts necessary to have a beneficial effect;
4. Incorporate the supplement into your horse's diet at recommended amounts and allow for enough time to determine if an effect is seen.



When Do Horses Need Supplements?

There are some cases when supplementation is helpful for health and/or performance, to help joints, hooves, or electrolyte balance during strenuous activities. Once the nutrients provided by good quality forage and concentrate(s) have been evaluated for dietary balance, supplements may be helpful to fill in nutrient gaps. Certain medical conditions or performance issues can be aided with the addition of supplements to the diet.

After it is decided that the horse does need a supplement, choosing the proper supplement is important and can be a tedious job sifting through the options. Make sure to compare ingredients and the amounts contained in the selected supplements. It is important to look at the serving size to compare the same weights whether in grams or ounces, pounds, or kilograms. Commercial supplements also contain many ingredients in addition to the primary nutrient of concern and could potentially over supplement particular nutrients, especially if contained in several of the supplements in the horse's diet (e.g., vitamin A, selenium, magnesium, etc.). Also make sure to follow recommendations as to the feeding amount to avoid any potential toxicity that could occur due to overdosing. If there might be any questions regarding the dosage or clarification on what is on the label, it would be a good idea to call the company; any reputable company should be able to assist you.

Finally, results take time; feeding supplements for at least one month before deciding to continue or discontinue the supplement is recommended. If feeding a fat-soluble product (e.g., vitamin E) or hoof supplement (treating the hoof from the inside out, thus allowing time for hoof growth) results may take several months or longer to be evident.

Supplement Types and Recommendations

Below are descriptions of the individual classes of supplements for horses, with tips to help you become a more educated consumer.

Joint Supplements

Joint supplements are the most popular class of supplements for horses. These supplements are used for one of two reasons:

1. To help decrease clinical signs of osteoarthritis (OA) – or in other words, make an unsound horse sound.
2. To prevent any joint damage from exercise or decrease the risk of arthritis with advancing age.

Using joint supplements as a preventative measure can be a waste of money. Oral joint supplements have not been scientifically proven to 'prevent' OA in the future. Studies have found some joint supplement ingredients possess anti-inflammatory properties, which theoretically could aid in preventing future damage, but no direct link has been established. Some ingredients often added to various joint supplements include chondroitin sulfate (CS), glucosamine, hyaluronic acid (HA), methysolfonylmethane (MSM), and avocado soy unsaponifiables (ASU), among others (vitamin C, magnesium, etc.). However, many joint supplements do not contain adequate amounts of these ingredients that have been scientifically proven to be effective (Oke and McIlwraith, 2010). Low concentrations of these ingredients in joint supplements are further compounded by concerns about digestibility. For example, CS and glucosamine are only 32 and 2.5 % digestible, respectively, and HA is such a huge molecule that the mechanism of absorption is still in question! For a review on some of the research behind joint supplements see Goodrich and Nixon, 2006.



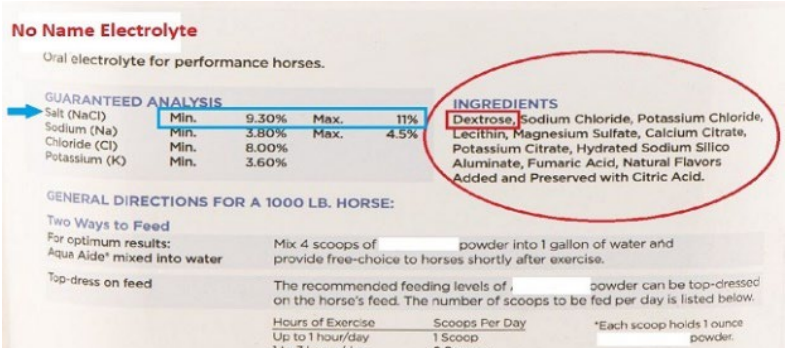
Figure 4. Joint supplements may or may not prevent young horses like this jumper from developing osteoarthritis as they get older. Photo: Purple Horse Design with permission.

The best recommendation for joint supplements is to check the labels. Make sure supplements that you are considering have the proper quantity of ingredients in them (i.e., at least 10,000 mg glucosamine, 7,000 mg CS) and then use your judgement as to whether that supplement may help your horse. If your horse shows no improvements or changes after a full month of supplementation, the horse might be one of those horses that just does not respond to those particular ingredients. This doesn't mean that the supplement won't work for other horses, and it doesn't mean that all joint products won't help your horse. You could then decide to try another product, maybe one with ASU which has been proven effective in helping with pain and inflammation of OA (Kawcak et al., 2007), or some different combination of ingredients, or try a pharmaceutical product at the direction of a veterinarian instead.

Electrolytes

Electrolytes include minerals with an electrical charge. The main electrolytes include sodium, chloride, potassium, calcium, and magnesium. If you have an exercising horse that is sweating on a regular basis, you SHOULD be feeding an electrolyte product! Horses have very highly concentrated sweat, and thus, they lose a lot of electrolytes when sweating. But it is key to know that this is *the only time* horses lose electrolytes. If your horse is not sweating, they do not need electrolytes (the only exception is in horses with anhidrosis, or the inability to sweat; there are special electrolyte mixtures for these horses). Therefore, if the only reason you have started your horse on an electrolyte supplement is because it is summer and hot outside, you are wasting your money.





Figures 5 (left) and 6 (right) are two examples of powdered electrolyte labels. Figure 6 is not a good example because Dextrose (a sugar) is the first ingredient, where Figure 5 shows an electrolyte with salt as the first ingredient. Also, the percentage of salt in each is very different (min=9.3% in Figure 6 vs. 57% in Figure 5).

The key with electrolyte supplements is that they MUST have salt or sodium chloride as the #1 ingredient (Figure 5)! If it contains glucose, sucrose, fructose or any other sugar, the supplement will not be effective in replacing lost electrolytes. For example, Gatorade is formulated for humans and has a type of sugar as the first ingredient. While horses would love the taste, it will not do much else for them (Figure 6).

Electrolyte supplements come in numerous forms. You can use which ever product is best for you and your horse (i.e., paste mixtures in dosing syringes, powders to top dress on feed or mix in water or other carrier, etc.). Just remember, if you are mixing electrolytes in water, make sure your horse will drink the water and always have a plain water bucket available as well.

Antioxidants

Antioxidants are things like vitamins (vitamins E, C and A), also enzymes (glutathione peroxidase and superoxide dismutase), as well as others like selenium, Co-Q10, cysteine, lipoic acid, and glutathione. Antioxidants play a role in protecting cells from oxidative damage. The browning of an apple or rust are examples of every day oxidative damage, but this also can happen to our body's cells (such as immune, muscular, or nervous cells) during times of stress. Sources of stress can include exercise, growth, pregnancy, or lactation, disease, and illness. Antioxidants will help prevent and repair this damage, and they work best when used as mixtures and not a pure source of one particular antioxidant. If you want more information on antioxidants see the previously published factsheet "Antioxidants and Your Horse" FS1065 (https://njaes.rutgers.edu/pubs/publication.php?pid=FS1065) or the scientific review on antioxidants by Williams, 2016.

Hoof supplements

Hoof supplements are a popular category of supplements for horses. Benefits of supplementation are often difficult for horse owners to "see" especially in the initial weeks after you start to add a hoof supplement to the diet. Since hooves take 8-12 months to grow from the coronary band down to the ground, you are essentially feeding the hoof from the inside out. You should not expect a noticeable difference in a month, and most hoof supplements need to be used for almost a year before determining if they will be a wise investment worth continuing. Further, there are a lot of environmental or genetic factors that can impact hoof health. Maintaining horses in poor environmental conditions (i.e., too wet, or too dry, etc.), could limit or even completely negate any benefits derived from supplementation (Figure 7).



Figure 7. Horses standing in conditions such as this wet shelter area could limit or eliminate any benefits of hoof supplements. Photo credit: C. Williams

Ingredients (and amounts) in hoof supplements that have been proven to be effective in aiding hoof growth are biotin (20 mg per day), zinc (175-250 mg per day), iodine (1 mg per day), and methionine (exact amount is unknown) all in therapeutic quantities much higher than is in the diet. However, remember this only works if your horse is receiving an *already* well-balanced diet as mentioned above. If you are not providing adequate nutrients in the diet, these ingredients will not help. For a review on the research behind hoof supplements see Kempson and Summerhall, 2005.

Digestive Aids and Gastric Health

“Digestive aids” are often marketed for gastric or gastrointestinal health, but there is also a population of these supplements that fall under probiotic, pre-biotic, or those for hindgut health. Digestive aid supplements for gastric health are typically used to treat, heal or decrease incidence of gastric ulcers. However, there are NO supplements that have been proven to cure ulcers! If you want to decrease the severity of ulcers or the probability of re-occurrence, pharmaceuticals are required, such as proton pump blockers. This is usually administered in combination with drugs that stimulate mucus secretion to help protect the stomach lining. If you suspect that your horse has ulcers, your veterinarian can help you determine the appropriate treatment plan.

If your horse has never had ulcers or if you have worked with your veterinarian to eliminate gastric ulcers in your horse, some supplements may help decrease development (or re-occurrence) of ulcers in the future. However, there are many types of supplements, and many have different uses. Antacids usually have high levels of calcium, aluminum, and magnesium. Antacids are very short acting (30-60 min.) and are designed to neutralize acid already in stomach. There is no effect on acid secretion and multiple treatments daily are needed. Therefore, these supplements are typically only used immediately before exercise, short transport, or any short-term stress. There are also several nutraceuticals that have various degrees of efficacy in preventing ulcers. Most research on these supplements comes out of Louisiana State University’s Veterinary School by Dr. Frank Andrews (see Andrews et al., 2016 for a review of his research). Dr. Andrews has proven that sea buckthorn berry protects against glandular

ulcers, pectin-lecithin increases mucus concentration (which coats the stomach), and chelated zinc and other minerals increase healing of the epithelial cells lining the stomach. However, other natural products like aloe vera and papaya have been shown to have little to no effect. Just keep in mind that unless horses are managed properly with a balanced, forage-based diet, and eliminating as much stress as possible, none of these supplements will be effective in preventing ulcers.

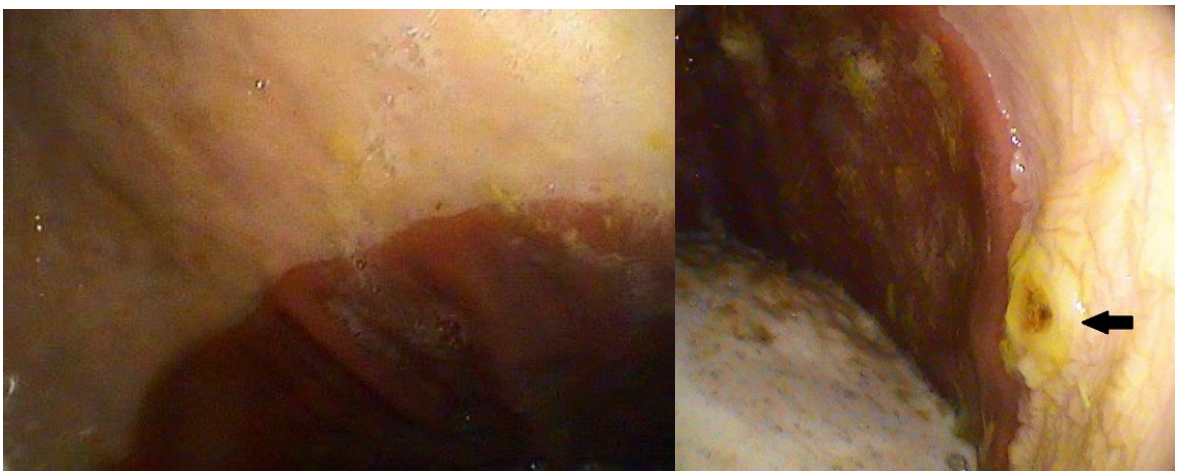


Figure 8 (left) and 9 (right). Unless your horse's stomach is free of ulcers like in #8 showing both the glandular (pink) and non-glandular (white) portions with margo plicatus (line between the two clear of ulcers), most supplements will not be able to keep the stomach free from Grade 3 ulcers coming back, as shown in #9 (arrow is indicating large ulcer). Photo credit: Foundation Equine, with permission.

The supplements that fall under pro/pre-biotic categories are used for hindgut health, microbiome modulation, and to help increase digestion when digestive processes have been compromised (e.g., colic, antibiotics, other illness, etc.). The U.S. Office of Regulatory Affairs of the FDA (1995) and AAFCO (2007) have redefined probiotics as "a source of live, naturally occurring microorganisms" and require feed manufacturers to use the term "direct-fed microbials" (DFM). These naturally occurring live organisms produce B-vitamins, growth inhibitors and digestive enzymes to help break down the nutrients in the diet. For a scientific review on probiotics see the review Cooke et al., 2021.

Pre-biotics can be considered 'food for the gut microbiome' and consist of specific ingredients that are known to promote the health and growth of naturally occurring microbiota already present in the gastric environment (either promoting microbes that are beneficial for health or suppressing microbes that can be detrimental). Typically, probiotics are used after antibiotic treatment, illness or surgery, or other stresses. However, there has been no evidence to prove that providing probiotics to animals with healthy thriving gut flora would have any effect. Pre-biotics will increase fiber digestion, normalize problem feces, and in some cases and help stabilize gut pH; they could also help with decreasing disease-causing gut bacteria. Bacterial populations including the *Lactobacillus* species might effectively treat some conditions like diarrhea. Yeast, including *Saccharomyces cerevisiae*, has been found to increase feed and fiber digestibility and milk production in mares, along with increase growth rate in foals. Some additional ingredients included in pre-biotics include fructooligosaccharides, beet pulp, oat hulls, and soy hulls, all which the microbiome can ferment.

Calming Aids

Calming aid supplements are designed for the nervous horse, and while the theory behind the science might sound promising, the research has been slow to prove these effective. Most of the supplements in this class contain various B vitamins. Thiamine, in particular, is commonly fed to calm a nervous horse. All B vitamins are all water soluble and therefore will not be toxic, even when supplemented at high levels. If they are not needed in the system, B vitamins are simply excreted in the urine. However, over-supplementation does produce some very expensive urine! Chromium, which is a mineral, and tryptophan which is an amino acid, are also common components of calming aid supplements. Magnesium is also found at very high levels in calming aid supplements. A word of caution here - make sure you are not over-supplementing magnesium by providing it in other supplements. If your horse is on another mineral supplement containing magnesium, stop feeding the calming aid or the other supplement. The upper safe limit for magnesium is around 30 grams per day, which could easily be attained by adding 10 grams of Mg from a calming supplement on top of another one or two supplements.

However, regardless of formulation, there is limited research proving that any calming aid supplements will actually 'calm' a nervous horse.

Muscle Builders, Weight Gain Supplements, and Coat Conditioners

Muscle builder supplements are typically high in amino acids, which are the building blocks of protein. Lysine and threonine are limiting amino acids for horses (i.e., those found in the smallest amounts in natural feedstuffs) and should be included at higher levels in horse diets. Gamma oryzanol (extracted from rice bran) is typically found in muscle building supplements as well as creatine. Research performed by the supplement manufacturers has shown they can be effective in helping performance horses build muscle. It is important, however, to do your homework to find out if the product you are considering has the research to prove it contains the right amount and combination of ingredients to be the most effective. Contact the supplement manufacturer to determine the ingredients and concentrations within a product you are considering.

Weight gain supplements are typically high fat and may include higher levels of omega-3 fatty acids. These supplements usually use fish oil and flax seed as the fat source to increase the omega-3 content. However, many of these supplements are only fed at very small amounts and do little to increase the total caloric content of the diet, which is usually what is necessary to put on weight. If a horse is underweight and already consuming recommended amounts of forage and concentrate, weight gain can be achieved through providing rice bran (stabilized) at one half to two pounds per day depending on the size of the horse and how much weight gain is needed. Or possibly top-dressing vegetable oils up to a maximum of 2 cups per day, on the daily grain ration. As with other fat supplements as well, due to the lack of a gall bladder in horses, the total diet should not contain more than 20% fat and should always be added to the diet slowly over the course of about a week.

For *coat conditioners*, the nutrients that help coat quality are similar to those used in weight gain products – i.e., essential fatty acids. As mentioned above, the use of products that are higher in omega-3 fatty acids is popular, so coat conditioners usually contain flaxseed, linseed, or a fish oil. The quantity of fatty acids in these products, however, is even smaller than in weight builders and will NOT result in weight gain. While you might see some benefit from coat conditioning products, if you would like to save money on your supplement costs, try implementing a more vigorous grooming regimen and using some good old elbow grease or just a 'splash' of any vegetable oil.

Herbal Supplements

Some herbs can be classified as adaptogens, immunostimulants, or both. Adaptogens increase resistance to stressors -physical, chemical, or biological, whereas immunostimulants activate the defense mechanisms against viral, bacterial, or cellular infections. Most of the studies to date in laboratory animals, humans, and other species have determined that the immunologic effect of herbal supplements does not enhance normal immune response but may have beneficial effects if the immune system is compromised.



Figure 10. Just because herbs are natural, doesn't mean they are always healthy. Like the weeds in this pasture, some herbal products also contain toxic substances. Photo credit: C. Williams

The first thing to realize about herbal supplements is that even though they are naturally occurring it doesn't always mean they are safe! Use caution when selecting an herbal product for these reasons:

- Herbal products may have a drug action or interaction with other medications.
- There is no regulation on herbal products manufactured/sold for horses.
- Very little research is done with herbal products in horses.
- Some herbs will contain prohibited substances (or those that may cause disqualification or a positive drug test for certain competition organizations like USEF or racing commissions) or toxic components.

While numerous herbs and herbal products are being used in the equine industry, most of the herbal supplements have never been proven effective in horses. Below are several well-known herbs that have been evaluated in equine research trials.

- **Echinacea (*Echinacea sp.*)** – Has properties including immune-stimulating, anti-inflammatory, and antioxidant. Active components in Echinacea include: polysaccharides, glycoproteins, alkamides, cichoric acid (derivative of caffeic acid). In humans and mice, the extracts stimulate phagocytosis and lymphocyte function, among other actions to help fight infection. Horses with strangles showed improvement of symptoms and a return to normal appetite after 24 hours on Echinacea. Supplemented horses were immune stimulated, resulting in an increased lymphocyte count and decreased neutrophil count, as well as an increase in red blood cells and hemoglobin.
- **Devil's Claw (*Harpagophytum procumbens)* –** Anti-inflammatory properties are the main action with Devil's Claw, with active ingredients including iridoid glycosides, acetylated phenolic glycosides, and terpenoids. Human clinical studies reported a decrease in pain intensity and an increase in joint flexibility. There are no reports of Devil's Claw alone in horses. However, a study in horses with osteoarthritis used a product with an herbal composite joint supplement containing Devil's Claw and showed an anti-inflammatory effect. However, only one horse had an improvement in actual lameness or flexion score when tested by a veterinarian.
- **Garlic (*Allium sativum*) –** Properties of garlic include anti-bacterial, -viral, -fungal, and -parasitic. The active ingredients include cysteine sulfoxides, and gama-glutamylcysteines. Garlic is typically used for fly control, however, it has also been found to have an expectorant action (clears mucus) in horses. Caution is needed when using garlic, since it can result in toxicity symptoms including gastric irritation, decreased sperm production, and occupational asthma in humans.

Equine studies found that freeze dried garlic fed in large amounts (> 0.4 g/kg/d) to horses caused Heinz body anemia.

- **Ginger (*Zingiber officinale*) –** Anti-thrombitic (prevents clotting), -inflammatory, -bacterial, and antioxidant are a few of ginger's properties, with active ingredients including, paradol, gingerol, and myoga. In humans, it is a potential treatment for musculoskeletal disorders. After one large dose of ginger, exercised horses had a decrease in cardiovascular recovery time; however, negative effects were also seen such as an increase in inflammation. Also, in a companion equine study, there were no effects found on the oxidative stress or antioxidant status post-exercise. Therefore, ginger does not appear to be appropriate for equine use.
- **Ginseng [(*Panax ginseng* (Asian ginseng), *Panax quinquefolius* (American ginseng), *Eleutherococcus senticosus* (Siberian ginseng or eleuthero)] –** All types of ginseng have properties as an antioxidant and to stimulate the immune system. Its active ingredients include glycosidal saponins (ginsenosides), essential oils, and phytosterols. Many of the ginsenosides have antioxidant properties that protect membranes of nerve and immune cells. In horses, ginseng is a good supplement to help with efficacy of vaccination. In horses given a low-dose of ginseng for 28 days, a greater antibody titer response was seen by day 16 and a greater percentage of plasma T-lymphocytes vs. horses with no supplemental ginseng.
- **Valerian (*Valeriana sp.)* –** Valerian has a strong sedative activity, with active ingredients including valerenic acids and iridoid glycosides. In mice, valerian decreased central nervous system activity equal to that found for Phenobarbital, which is what makes it effective in treating insomnia and other sleep disorders in humans. In pigs, valerian-containing products reduced physiological stress during transportation. While no studies have been performed in horses, valerian is contained in 'calming aids' or 'stress relief' supplements. Caution needs to be taken when supplementing valerian however, as certain show organizations, such as FEI, ban this product from use during competition.
- **Bee Pollen (*Propolis)* –** is a nutraceutical that has properties including antioxidant, antimicrobial, antifungal, anti-inflammatory, and immunoregulatory. Active ingredients include a long list with many being antioxidant in nature. There have been anecdotal reports in horses showing improved oxygen utilization, lower heart rates, and firmer muscle tone. A 55 % bee-pollen supplement given to horses for 42 days did not alter physical fitness or immunological variables but did increase feed intake and nutrient retention.

As mentioned briefly above, some herbs contain prohibited substances (for competition or racing). Some of these include:

- Salicylates: found in meadowsweet, poplar, willow, and wintergreen
- Heroin: found in poppy
- Caffeine: found in cocoa, coffee, cola soda, guarana, and teas
- Steroids: found in ginseng, licorice, hops, and sage

Other supplements can have drug interactions, including:

- Valerian: prolong the action of barbiturates, interact with alcohol, and inhibit cytochrome P450 (can lead to multiple drug interactions)

- Echinacea: persistent use is related to hepatotoxic effects (should not be taken with other hepatotoxic drugs like steroids)
- Ginger: inhibit thromboxane synthetase and increase bleeding time, which could be detrimental if used with anti-clotting drugs
- Ginseng: side effects include hypertension, insomnia, vomiting, headache, nervousness, sleeplessness, and epistaxis in humans; therefore, it is recommended to discontinue use of warfarin, heparin, aspirin, and other NSAIDs

In summary, various herbs are being used in the equine industry, but most have never been proven to be effective in horses. Caution must be taken when selecting a supplement since regulatory prohibitions and herb/drug interactions are potential issues. If a horse is at potential risk of toxicity or interaction, a veterinarian and/or nutritionist should be contacted (Harman, 2002). For more details on these herbal supplements, see Williams and Lamprecht (2008) for a review.

Take Home Message

In summary, be an educated buyer and look at the labels of the products you are considering purchasing. Evaluate product quality control measures at the companies you are buying from and research-based products with research preferably performed in horses. Don't be afraid to call the company directly. Ask the right questions to the right people and don't be swayed by "too good to be true" claims and testimonials. And remember that many horses that do not need a supplement at all! Just because your friend, neighbor, trainer, etc. has their horse on a specific product does not always mean your horse needs it as well. Contact an equine nutritionist for more information in developing a balanced diet and selecting a supplement for your horse.

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