

Pro-Biotics; Bugs you do want in your horse's life

As Published in *Equine Wellness* 2006

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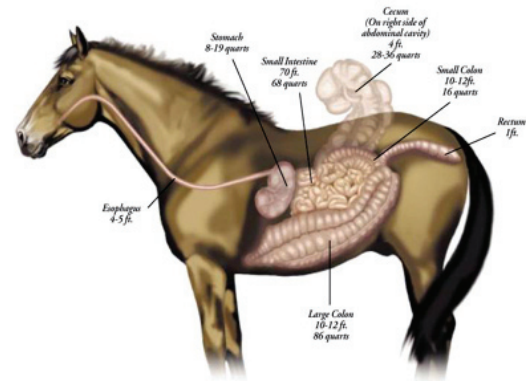
Although many people in the horse world use the term pro-biotic, they may not realize the major role these live beneficial organisms play in their horse's health. Pro-biotics boost our horse's immune health, prevent some forms of colic, and may help our horses steer clear of equine ulcers. In fact, in her book, *Equine Supplements and Nutraceuticals*, Dr. Eleanor Kellon, DVM, states "Pro-biotics improve digestion, protect against dangerous bacteria such as salmonella, and reduce gas accumulation."

These mighty microbes are definitely worth a closer look so jump on-board while we take a trip into the world of bugs -- beneficial microorganisms, that is.

Digestive systems and good gut bacteria –working together for health

To fully appreciate beneficial bugs, it's important to have a basic understanding of the role they play in the equine digestive system.

When a horse starts grinding food with his teeth, his mouth releases enzymes,



and thus begins that mouthful's approximately 100-foot journey through the digestive tract. The food mixes with digestive juices as it enters the stomach where digestive enzymes and billions of microbials begin their work. Although a horse's stomach is relatively small compared to its size, it is tasked with initiating the breakdown of nutrients using digestive enzymes and stomach acids; very little absorption takes place there.

Instead, soluble carbohydrates, along with minerals, fats and proteins, are absorbed in the small intestine. Insoluble carbohydrates that are not so easily digested, as well as any undigested soluble carbohydrates, then pass to the cecum, the "fermentative vat", before moving into the large intestine. A variety of live microbials in the cecum break down the remaining nutrients into a

viable usable form -- absorbable volatile fatty acids which the horse uses for energy and nutrients.

Without a strong army of beneficial intestinal bacteria, the food moving through the digestive tract is not “fermented” properly, and some remains undigested. When it hits the gastro-intestinal tract, this undigested food may lead to colic, bloat, or laminitis and increase the possibility of developing food-related allergic conditions.

The Good, Bad and Neutral?

Although people often think in negative terms when they hear the word “bacteria”, in reality there are three kinds of bacterial micro-organisms -- “good” (beneficial), “neutral” and “bad” (i.e. E. Coli, salmonella. et al).. Horses need a balance between these, thankfully only a few of the “bad” lactic acid-producing bacteria are needed to keep the good and neutral in check. As long as the balance of good, neutral and bad bacteria remains constant and the gastro-intestinal tract is stable, the horse stays healthy.

However, when the delicate balance is upset, the horse may not be able to properly digest or assimilate the nutrients he needs from his food. This can manifest itself as a dull coat, skin conditions, allergies, inability to maintain weight, slow hoof growth, sore feet, or other medical conditions including intermittent diarrhea.

Imbalance-tipping the scales

The population of beneficial live micro-organisms in the cecum remains relatively “stable” under normal conditions. As long as a horse is never stressed, never needs to be chemically wormed, is never vaccinated, never has a change in feed, and never needs antibiotics, then the balance should remain unaltered.. However, as we all know, our horses do experience stressful events, may need antibiotics or worming on occasion, and do have feed changes with the seasons and each load of hay.

Some of the most common causes of digestive disturbances in horses include:

- stress brought on by sudden changes in food, unseasonable weather conditions, moving, travel, competition, training and showing.
- chemical worming
- parasitic infestations
- vaccines
- viruses
- fevers
- antibiotics
- breeding season, pregnancy, foaling, and weaning -- both for mare and foal.

Another far too common source of digestive disturbance is starch and/or sugar overload. Grazing on rich spring grass or eating a diet too high in sugars can disrupt beneficial microbials, causing partial die-off.. This raises the acidity in the gut, changing the natural pH balance, resulting in massive destruction of the normal micro-flora. Recent laminitis studies have indicated the toxins caused by this die-off can lead to laminitis.

Unfortunately, the micro flora/microbial balance in a horse can be upset much faster than it can be restored. The effect may not show up immediately, but a horse's beneficial intestinal bacteria can be depleted or destroyed and the pH of this environment severely altered during digestive upset.

Therefore, it's wise to be pro-active by reducing stressors, when possible and supplementing with pro-biotics during at-risk times or after chemical worming, vaccinations, or changes in feed stuff. Some people feed pro-biotics daily as a preventative and for their immune boosting effects.

Getting the most benefit from pro-biotics

Now that we understand the important role microbials play in our horse's health, it's time to learn about supplementation.. Really, there are three basic things to keep in mind:

1/ Numbers count. One serving of a good live microbial pro-biotic supplement should have a guaranteed minimum in the billions (not millions) of CFU (colony forming units) of lactic acid bacteria. Too little of the correct micro-organisms are likely to have little positive effect.

2/ Supplement pro-biotics during at risk times, especially during illness, stress, feed changes, traveling or foaling/weaning times. In high risk instances, such as with vaccinations, antibiotic treatments or chemical worming, begin two weeks

prior and continue two weeks after.

3/ Choose a variety of equine-friendly strains. Pick a product that contains *at least* six different strains of beneficial organisms.

SIDE-BAR

Some of the common beneficial strains of beneficial bacteria

- Combination of the Lactobacillus strains: Supports the colonization of friendly bacteria in the colon (hind gut area), aiding in a normal breakdown of food and proper digestion.
- Lactobacillus acidophilus: Produces lactic acid that keeps "bad bacteria" in check. Continued colonization by this bacteria helps to inhibit the growth of other pathogens (bad bacteria) by competing for nutrients and promoting healthy pH levels.
- Lactobacillus subtilis: Produces specific substances that have been observed to inhibit the growth of some pathogenic microorganisms including Escherichia coli, Staphylococcus aureus, and Salmonella sp.
- Lactobacillus lactis: A natural occurring micro flora that plays a critical role in maintaining a balanced intestinal ecosystem.
- Bacillus subtilis: Counteracts

deadly bacteria that can cause diarrhea.

- Saccromyces cervisiae: Derived from live yeast cultures. Produces certain enzymes and some B vitamins.

Now, when you hear the term *pro-biotic*, give a silent round of applause for the hardworking micro-organisms keeping your horse healthy and happy.

HINT- To reduce an animal's susceptibility to gut disturbances, you can routinely supplement with a product that couples pro-biotics with a high quality digestive enzyme complex containing amylase, cellulose, b glucanase, lipase, pectinase and protease.

Callout/sidebar

Webster's Unabridged Dictionary defines the word "pro" as "*being in favor of*" and "biotics" as a branch of science dealing with the phenomena of *living organisms*. "Anti-biotic" on the other hand means *against life* or *against living organisms*

SIDEBAR Pro-biotics help prevent ulcers

During his presentation at the 2005 American Association of Equine Practitioners (AAEP) Practice Management Seminar: Focus on Equine Colic, internationally recognized veterinarian Frank Andrews, DVM, MS, Diplomat ACVIM, discussed colonic

ulcers in horses.

Dr. Andrews suggested we all consider implementing methods to decrease stress and to avoid the use of non-steroidal anti-inflammatory drugs (NSAIDs). He also recognized pro-biotics and digestive aids as important tools in helping the many performance horses that may have colon pain.

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